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Supplementary material D - Liquid compositions calculated for A- and B-type antecrysts and C-type phenocrysts.

D1. Partition coefficients selected for the calculation of magmatic liquids at chemical equilibrium with clinopyroxene ante- and phenocrysts.

D2. Calculated compositions (incompatible trace elements) of the liquids in equilibrium with A- and B-type antecrysts and C- type phenocrysts.

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D1. Partition coefficients applied to the calculation of magmatic liquids at chemical equilibrium with clinopyroxene antecrysts and phenocrysts form the investigated dikes.

Antecryst	Sample	Magmatic liquid[1]	Kd values	Reference
A3	R79	Basanite	Y: 0.51 Zr: 0.2 Nb: 0.005 La: 0.07	Adam & Green (2006)
A5	G	Lamprophyre (dike matrix)	Y: 0.79 Zr: 0.68 Nb: 0.07 La: 0.18	Ubide et al. (2014a)
B3	max	Myaskitic phonolite (lava)	Y: 1.5 Zr: 1.7 Nb: 0.04 La: 0.7	Olin & Wolf (2010)
B5	R	Trachyphonolite (lava)	Y: 1.53 Zr: 0.3 Nb: 0.01 La: 0.26	Fedele et al. (2009)
C	SM-PN	Tephrite/camptonite (dike matrix)	Y: 0.905 Zr: 0.567 Nb:0.014 La: 0.148	Ambrosio & Azzone (2018)

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D2. Calculated compositions (incompatible trace elements) of the liquids in equilibrium with A- and B-type antecrysts and C- type phenocrysts.

Macrocryst		cpx A3					cpx A5	cpx B3		
Macrocryst compositions	Y	27.21	29.34	25.42	23.3	24.46	87.48	22.18	19.14	19.49
	Zr	337.78	256.74	179.62	316.04	472.01	153.56	786	553.78	663.67
	Nb	4.21	3.63	0.95	4.78	5.34	0.744	6.28	6.24	3.63
	La	25.5	36.89	31.27	24.2	30.61	41.79	46.93	39.71	42.04
Selected Kd	Y	0.51	0.51	0.51	0.51	0.51	0.79	1.5	1.5	1.5
	Zr	0.2	0.2	0.2	0.2	0.2	0.68	1.7	1.7	1.7
	Nb	0.005	0.005	0.005	0.005	0.005	0.07	0.04	0.04	0.04
	La	0.07	0.07	0.07	0.07	0.07	0.18	0.7	0.7	0.7
Calculated liquid	Y	53.35	57.53	49.84	45.69	47.96	110.73	14.79	12.76	12.99
	Zr	1688.90	1283.70	898.10	1580.20	2360.05	225.82	462.35	325.75	390.39
	Nb	842.00	726.00	190.00	956.00	1068.00	10.63	157.00	156.00	90.75
	La	364.29	527.00	446.71	345.71	437.29	232.17	67.04	56.73	60.06

Macrocryst		cpx B3						cpx B5		
Macrocryst compositions	Y	23.48	22.23	25.18	14.51	34.93	14.72	30.47	28.27	27.13
	Zr	854.99	618.21	662.33	711.03	593.89	839.05	466.67	343.97	309.71
	Nb	3.83	3.04	4.28	1.76	8.14	1.8	3.78	2.36	2.07
	La	36.81	40.5	44.26	27.29	43.55	35.62	32.47	35.21	24.11
Selected Kd	Y	1.5	1.5	1.5	1.5	1.5	1.5	1.53	1.53	1.53
	Zr	1.7	1.7	1.7	1.7	1.7	1.7	0.3	0.3	0.3
	Nb	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.01	0.01
	La	0.7	0.7	0.7	0.7	0.7	0.7	0.26	0.26	0.26
Calculated liquid	Y	15.65	14.82	16.79	9.67	23.29	9.81	19.92	18.48	17.73
	Zr	502.94	363.65	389.61	418.25	349.35	493.56	1555.57	1146.57	1032.37
	Nb	95.75	76.00	107.00	44.00	203.50	45.00	378.00	236.00	207.00
	La	52.59	57.86	63.23	38.99	62.21	50.89	124.88	135.42	92.73

Macrocryst		cpx B5							cpx C	
Macrocryst compositions	Y	34.17	32.15	53.99	43.84	49.81	30.47	37.76	25.9	28.6
	Zr	488.35	461.96	407.94	339.71	414.4	466.67	877.31	149	212
	Nb	3.94	3.47	4.63	1.085	4.77	3.78	15.31	1.51	5.14
	La	33.24	30.4	57.22	57.92	51.13	32.47	60.42	14.5	20.1
Selected Kd	Y	1.53	1.53	1.53	1.53	1.53	1.53	1.53	0.905	0.905
	Zr	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.567	0.567
	Nb	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.014	0.014
	La	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.148	0.148
Calculated liquid	Y	22.33	21.01	35.29	28.65	32.56	19.92	24.68	28.62	31.60
	Zr	1627.83	1539.87	1359.80	1132.37	1381.33	1555.57	2924.37	262.79	373.90
	Nb	394.00	347.00	463.00	108.50	477.00	378.00	1531.00	107.86	367.14
	La	127.85	116.92	220.08	222.77	196.65	124.88	232.38	97.97	135.81

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D2. Calculated compositions (incompatible trace elements) of the liquids in equilibrium with A- and B-type antecrysts and C- type phenocrysts.

Macrocryst		cpx C								
Macrocryst compositions	Y	20.6	19.8	20.5	28.1	25.3	52.7	16.4	23.3	21
	Zr	85	90	120	166	138	456	101	143	108
	Nb	0.564	0.486	0.92	1.71	1.65	6.11	0.591	1.4	0.72
	La	8.03	9.2	12.1	12.3	11	65.3	9.55	10.9	8.48
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	22.76	21.88	22.65	31.05	27.96	58.23	18.12	25.75	23.20
	Zr	149.91	158.73	211.64	292.77	243.39	804.23	178.13	252.20	190.48
	Nb	40.29	34.71	65.71	122.14	117.86	436.43	42.21	100.00	51.43
	La	54.26	62.16	81.76	83.11	74.32	441.22	64.53	73.65	57.30

Macrocryst		cpx C								
Macrocryst compositions	Y	41.3	23.4	38.5	22.8	34.1	34.3	28.5	18	16.8
	Zr	408	161	311	154	324	292	191	90.9	78.5
	Nb	4.96	1.21	3.52	1.36	3.63	2.83	1,670	0.671	0.613
	La	38.7	13.5	48.6	14.9	29.3	27.5	21.5	10.4	6.69
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	45.64	25.86	42.54	25.19	37.68	37.90	31.49	19.89	18.56
	Zr	719.58	283.95	548.50	271.60	571.43	514.99	336.86	160.32	138.45
	Nb	354.29	86.43	251.43	97.14	259.29	202.14	119285.71	47.93	43.79
	La	261.49	91.22	328.38	100.68	197.97	185.81	145.27	70.27	45.20

Macrocryst		cpx C								
Macrocryst compositions	Y	15.7	21.5	28	30.3	18.7	28.4	40.5	13.9	40.6
	Zr	70.4	108	251	243	103	237	169	79.3	465
	Nb	0.514	0.993	2.53	2.59	0.834	2.17	1.75	0.431	7.26
	La	6.76	9.87	22.9	27.4	10.4	22.9	77.7	8.09	58.2
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	17.35	23.76	30.94	33.48	20.66	31.38	44.75	15.36	44.86
	Zr	124.16	190.48	442.68	428.57	181.66	417.99	298.06	139.86	820.11
	Nb	36.71	70.93	180.71	185.00	59.57	155.00	125.00	30.79	518.57
	La	45.68	66.69	154.73	185.14	70.27	154.73	525.00	54.66	393.24

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D2. Calculated compositions (incompatible trace elements) of the liquids in equilibrium with A- and B- type antecrysts and C- type phenocrysts.

	Macrocryst	cpx C								
Macrocryst compositions	Y	25	31.7	27.1	37.1	29.1	27	45.4	29.2	17.1
	Zr	226	438	299	630	311	377	443	345	166
	Nb	1.57	9.98	2.64	8.71	3.22	3.88	6.2	3.14	2.36
	La	17	41.2	24.3	52.2	29.3	30.3	50.9	27.1	14.5
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	27.62	35.03	29.94	40.99	32.15	29.83	50.17	32.27	18.90
	Zr	398.59	772.49	527.34	1111.11	548.50	664.90	781.31	608.47	292.77
	Nb	112.14	712.86	188.57	622.14	230.00	277.14	442.86	224.29	168.57
	La	114.86	278.38	164.19	352.70	197.97	204.73	343.92	183.11	97.97

	Macrocryst	cpx C								
Macrocryst compositions	Y	22.6	38.5	25.1	31.1	48.7	44.6	52.5	62.6	29.6
	Zr	215	386	227	508	560	462	373	668	469
	Nb	2.19	5.61	1.74	4.56	33,600	13,180	22.1	22.3	6.46
	La	17.7	36.1	15.6	34.6	134	87.7	141	82.3	40.9
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	24.97	42.54	27.73	34.36	53.81	49.28	58.01	69.17	32.71
	Zr	379.19	680.78	400.35	895.94	987.65	814.81	657.85	1178.13	827.16
	Nb	156.43	400.71	124.29	325.71	2400000.00	941428.57	1578.57	1592.86	461.43
	La	119.59	243.92	105.41	233.78	905.41	592.57	952.70	556.08	276.35

	Macrocryst	cpx C								
Macrocryst compositions	Y	29.1	46.2	28.5	24.6	53.6	30.5	22.4	15.6	30.1
	Zr	257	727	255	264	568	301	294	137	454
	Nb	5.66	9.1	3.82	5.95	160	5.95	1.43	0.981	2.49
	La	26	55.4	27.9	21.1	96.6	32.4	17.5	10.5	32.5
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	32.15	51.05	31.49	27.18	59.23	33.70	24.75	17.24	33.26
	Zr	453.26	1282.19	449.74	465.61	1001.76	530.86	518.52	241.62	800.71
	Nb	404.29	650.00	272.86	425.00	11428.57	425.00	102.14	70.07	177.86
	La	175.68	374.32	188.51	142.57	652.70	218.92	118.24	70.95	219.59

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D2. Calculated compositions (incompatible trace elements) of the liquids in equilibrium with A- and B- type antecrysts and C- type phenocrysts.

Macrocryst		cpx C								
Macrocryst compositions	Y	14.7	34.7	36.5	17.7	17.4	21.5	18	19.7	9.88
	Zr	92.4	547	321	161	196	172	268	163	1.39
	Nb	0.348	6.65	3.45	0.899	0.92	1.19	2.53	0.95	0.889
	La	7.19	71.6	32.9	11.4	16.7	11.1	19.8	11.3	0.018
Selected Kd	Y	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905	0.905
	Zr	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	Nb	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
	La	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
Calculated liquid	Y	16.24	38.34	40.33	19.56	19.23	23.76	19.89	21.77	10.92
	Zr	162.96	964.73	566.14	283.95	345.68	303.35	472.66	287.48	2.45
	Nb	24.86	475.00	246.43	64.21	65.71	85.00	180.71	67.86	63.50
	La	48.58	483.78	222.30	77.03	112.84	75.00	133.78	76.35	0.12