

**Gems & Gemology Data Depository Table 1: Electron-microprobe analyses of pezzottaite done at the University of New Orleans.<sup>a</sup>**

Laurs et al.  
"Pezzottaite," Winter 2003

Source	L. Thomas (purplish pink core of zoned crystal)							
Analysis	LT-1	LT-2	LT-4	LT-5	LT-9	LT-10	LT-11	LT-12
Oxides (wt.%)								
SiO <sub>2</sub>	57.15	56.35	55.32	56.51	57.35	56.86	56.02	56.60
TiO <sub>2</sub>	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	15.20	15.13	16.12	17.04	15.82	15.26	15.29	14.94
Sc <sub>2</sub> O <sub>3</sub>	0.02	0.03	0.04	0.03	0.02	0.03	0.03	0.03
BeO calc.	8.10	7.96	7.92	8.26	8.23	8.05	7.92	7.97
FeO	0.02	bdl	bdl	bdl	0.02	0.02	bdl	bdl
MnO	0.11	0.10	0.08	0.07	0.10	0.07	0.10	0.11
MgO	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.53	0.61	0.41	0.55	0.53	0.51	0.48	0.51
K <sub>2</sub> O	0.16	0.15	0.19	0.18	0.16	0.16	0.13	0.13
Rb <sub>2</sub> O	0.74	0.79	0.73	0.70	0.80	0.73	0.78	0.77
Cs <sub>2</sub> O	13.51	13.39	13.43	13.53	13.72	13.49	13.75	13.73
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72
Total	99.40	98.38	98.10	100.75	100.63	99.05	98.38	98.66
Ions per 18 oxygens, anhydrous basis								
Si	6.093	6.080	5.990	5.942	6.047	6.084	6.064	6.101
Ti	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Σtet.	6.093	6.080	5.990	5.942	6.047	6.084	6.064	6.101
Be	2.074	2.063	2.059	2.087	2.084	2.070	2.060	2.063
Li	0.926	0.937	0.941	0.913	0.916	0.930	0.940	0.937
ΣBe+Li	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
Al	1.910	1.924	2.058	2.112	1.966	1.925	1.951	1.898
Mg	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Fe <sup>2+</sup>	0.001	bdl	bdl	bdl	0.002	0.002	bdl	bdl
Mn	0.010	0.009	0.007	0.007	0.009	0.006	0.009	0.010
Sc	0.002	0.003	0.003	0.003	0.001	0.003	0.002	0.002
Σoct.	1.923	1.936	2.068	2.121	1.979	1.936	1.962	1.911
Na	0.109	0.128	0.087	0.112	0.109	0.105	0.101	0.107
K	0.021	0.020	0.026	0.024	0.021	0.021	0.017	0.018
Rb	0.051	0.055	0.050	0.047	0.054	0.050	0.055	0.053
<b>Cs</b>	<b>0.614</b>	<b>0.616</b>	<b>0.620</b>	<b>0.607</b>	<b>0.617</b>	<b>0.615</b>	<b>0.635</b>	<b>0.631</b>
Σchannel	0.795	0.818	0.783	0.790	0.801	0.792	0.808	0.809

Source Analysis	Le Mineral Brut (via G. Rossman) <sup>b</sup>							
	GR-1	GR-2	GR-3	GR-4	GR-5	GR-6	GR-7	GR-8
Oxides (wt.%)								
SiO <sub>2</sub>	56.28	56.16	56.31	56.46	56.73	56.56	56.27	55.77
TiO <sub>2</sub>	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	16.05	15.70	16.51	16.20	15.69	16.19	16.11	16.15
Sc <sub>2</sub> O <sub>3</sub>	0.02	0.04	0.03	0.03	0.03	0.02	0.01	0.02
BeO calc.	8.10	8.02	8.16	8.14	8.11	8.14	8.09	8.02
FeO	bdl	bdl	bdl	bdl	bdl	0.02	bdl	bdl
MnO	0.15	0.10	0.10	0.16	0.11	0.12	0.11	0.14
MgO	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.43	0.46	0.37	0.31	0.47	0.26	0.26	0.40
K <sub>2</sub> O	0.12	0.12	0.09	0.12	0.14	0.10	0.10	0.12
Rb <sub>2</sub> O	0.91	0.86	0.78	0.91	0.69	0.81	0.77	0.80
Cs <sub>2</sub> O	14.91	14.79	14.88	14.72	14.59	14.81	15.13	15.00
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72	1.72	1.72	1.72
Total	100.85	100.12	101.11	100.95	100.43	100.91	100.74	100.31

Ions per 18 oxygens, anhydrous basis

Si	5.999	6.025	5.972	5.997	6.041	6.005	6.004	5.983
Ti	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Σtet.	5.999	6.025	5.972	5.997	6.041	6.005	6.004	5.983
Be	2.074	2.068	2.079	2.077	2.075	2.078	2.073	2.068
Li	0.926	0.932	0.921	0.923	0.925	0.922	0.927	0.932
ΣBe+Li	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
Al	2.016	1.985	2.063	2.029	1.969	2.026	2.026	2.042
Mg	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl	0.002	bdl	bdl
Mn	0.014	0.009	0.009	0.014	0.010	0.011	0.010	0.013
Sc	0.002	0.003	0.003	0.003	0.003	0.002	0.001	0.002
Σoct.	2.032	1.998	2.076	2.046	1.981	2.040	2.037	2.057
Na	0.089	0.095	0.075	0.064	0.097	0.054	0.054	0.084
K	0.017	0.016	0.013	0.017	0.019	0.014	0.014	0.016
Rb	0.062	0.059	0.053	0.062	0.047	0.055	0.052	0.055
<b>Cs</b>	<b>0.678</b>	<b>0.677</b>	<b>0.673</b>	<b>0.667</b>	<b>0.663</b>	<b>0.671</b>	<b>0.688</b>	<b>0.686</b>
Σchannel	0.846	0.847	0.814	0.810	0.826	0.793	0.809	0.842

Source Analysis	Shane McClure (0.31 ct)				
	sm round-1	sm round-2	sm round-3	sm round-4	sm round-5
Oxides (wt.%)					
SiO <sub>2</sub>	56.80	57.22	57.36	57.08	57.10
TiO <sub>2</sub>	bdl	bdl	0.04	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	15.70	16.01	15.79	15.55	15.91
Sc <sub>2</sub> O <sub>3</sub>	0.02	0.04	0.03	0.03	0.03
BeO calc.	8.11	8.23	8.23	8.13	8.18
FeO	bdl	bdl	bdl	bdl	bdl
MnO	0.07	0.12	0.12	0.10	0.07
MgO	0.01	0.02	0.02	0.02	0.03
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.43	0.39	0.42	0.44	0.34
K <sub>2</sub> O	0.12	0.17	0.13	0.13	0.12
Rb <sub>2</sub> O	0.81	1.12	1.12	0.83	0.76
Cs <sub>2</sub> O	13.90	13.64	13.82	13.62	13.81
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72
Total	99.84	100.83	100.97	99.82	100.22
Ions per 18 oxygens, anhydrous basis					
Si	6.050	6.030	6.045	6.066	6.044
Ti	bdl	bdl	0.003	bdl	bdl
Σtet.	6.050	6.030	6.048	6.066	6.044
Be	2.075	2.084	2.084	2.077	2.081
Li	0.925	0.916	0.916	0.923	0.920
ΣBe+Li	3.000	3.000	3.000	3.000	3.000
Al	1.971	1.988	1.962	1.948	1.985
Mg	0.001	0.003	0.003	0.003	0.004
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl
Mn	0.006	0.010	0.010	0.009	0.006
Sc	0.002	0.003	0.003	0.003	0.002
Σoct.	1.980	2.005	1.978	1.962	1.997
Na	0.088	0.081	0.086	0.091	0.070
K	0.016	0.022	0.017	0.017	0.016
Rb	0.056	0.076	0.076	0.057	0.051
<b>Cs</b>	<b>0.631</b>	<b>0.613</b>	<b>0.621</b>	<b>0.617</b>	<b>0.623</b>
Σchannel	0.791	0.791	0.799	0.783	0.761

Source Analysis	Le Mineral Brut (1.18 ct)				
	sm oval-1	sm oval-2	sm oval-3	sm oval-4	sm oval-5
Oxides (wt.%)					
SiO <sub>2</sub>	56.62	56.16	57.15	56.52	57.31
TiO <sub>2</sub>	bdl	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	15.72	15.44	15.81	15.78	15.58
Sc <sub>2</sub> O <sub>3</sub>	0.02	0.03	0.02	0.04	0.02
BeO calc.	8.10	7.95	8.18	8.06	8.16
FeO	bdl	bdl	bdl	bdl	bdl
MnO	0.08	0.05	0.05	0.07	0.06
MgO	0.01	0.01	0.01	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.60	0.44	0.55	0.42	0.50
K <sub>2</sub> O	0.19	0.13	0.12	0.13	0.20
Rb <sub>2</sub> O	0.83	0.74	0.83	1.04	0.79
Cs <sub>2</sub> O	13.92	13.28	13.18	12.78	12.80
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72
Total	99.97	98.09	99.77	98.72	99.30
Ions per 18 oxygens, anhydrous basis					
Si	6.035	6.063	6.051	6.045	6.075
Ti	bdl	bdl	bdl	bdl	bdl
Σtet.	6.035	6.063	6.051	6.045	6.075
Be	2.074	2.062	2.080	2.071	2.079
Li	0.926	0.938	0.920	0.929	0.921
ΣBe+Li	3.000	3.000	3.000	3.000	3.000
Al	1.975	1.964	1.973	1.989	1.946
Mg	0.001	0.002	0.001	bdl	bdl
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl
Mn	0.007	0.004	0.004	0.006	0.005
Sc	0.002	0.003	0.002	0.003	0.002
Σoct.	1.986	1.973	1.980	1.998	1.954
Na	0.123	0.092	0.114	0.086	0.102
K	0.025	0.018	0.016	0.018	0.027
Rb	0.057	0.051	0.056	0.071	0.054
<b>Cs</b>	<b>0.633</b>	<b>0.611</b>	<b>0.595</b>	<b>0.583</b>	<b>0.579</b>
Σchannel	0.838	0.772	0.781	0.759	0.761

Source Analysis	Le Mineral Brut (3.43 ct)				
	lg oval-1	lg oval-2	lg oval-3	lg oval-4	lg oval-5
Oxides (wt.%)					
SiO <sub>2</sub>	56.94	56.89	56.83	56.48	56.54
TiO <sub>2</sub>	bdl	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	15.67	16.03	16.38	15.50	15.84
Sc <sub>2</sub> O <sub>3</sub>	0.02	0.03	0.02	0.03	0.04
BeO calc.	8.11	8.16	8.21	8.03	8.10
FeO	bdl	bdl	bdl	bdl	bdl
MnO	0.06	0.04	0.06	0.08	0.06
MgO	bdl	0.01	bdl	bdl	0.01
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.38	0.35	0.40	0.41	0.47
K <sub>2</sub> O	0.09	0.14	0.10	0.10	0.11
Rb <sub>2</sub> O	0.73	0.72	0.90	0.96	0.90
Cs <sub>2</sub> O	13.78	13.76	13.88	13.65	14.08
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72
Total	99.66	100.00	100.67	99.15	100.04

Ions per 18 oxygens, anhydrous basis

Si	6.061	6.033	6.000	6.059	6.028
Ti	bdl	bdl	bdl	bdl	bdl
Σtet.	6.061	6.033	6.000	6.059	6.028
Be	2.075	2.079	2.083	2.068	2.074
Li	0.925	0.921	0.917	0.932	0.926
ΣBe+Li	3.000	3.000	3.000	3.000	3.000
Al	1.966	2.003	2.039	1.959	1.991
Mg	bdl	0.002	bdl	bdl	0.001
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl
Mn	0.005	0.004	0.006	0.007	0.005
Sc	0.002	0.003	0.002	0.003	0.004
Σoct.	1.973	2.012	2.047	1.969	2.000
Na	0.078	0.072	0.081	0.085	0.098
K	0.012	0.019	0.014	0.013	0.015
Rb	0.050	0.049	0.061	0.066	0.062
<b>Cs</b>	<b>0.626</b>	<b>0.622</b>	<b>0.625</b>	<b>0.624</b>	<b>0.640</b>
Σchannel	0.766	0.762	0.781	0.789	0.815

Source Analysis	D. Blauwet			D. Blauwet		
	DB1-1	DB1-2	DB1-3	DB2-1	DB2-2	DB2-3
Oxides (wt.%)						
SiO <sub>2</sub>	57.15	57.49	57.00	57.49	56.70	57.16
TiO <sub>2</sub>	bdl	0.02	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	15.56	15.60	15.62	16.65	16.81	16.57
Sc <sub>2</sub> O <sub>3</sub>	0.03	0.04	0.03	0.01	0.02	0.02
BeO calc.	8.12	8.18	8.11	8.34	8.23	8.29
FeO	bdl	bdl	bdl	bdl	bdl	bdl
MnO	0.14	0.14	0.14	0.14	0.13	0.14
MgO	bdl	bdl	bdl	bdl	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.20	0.14	0.32	0.32	0.30	0.44
K <sub>2</sub> O	0.08	0.09	0.09	0.07	0.07	0.07
Rb <sub>2</sub> O	0.98	0.95	1.04	1.02	1.01	0.96
Cs <sub>2</sub> O	12.95	13.02	12.55	12.92	12.50	13.09
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72	1.72
Total	99.08	99.54	98.77	100.85	99.64	100.61
Ions per 18 oxygens, anhydrous basis						
Si	6.083	6.086	6.073	6.003	5.979	5.996
Ti	bdl	0.002	bdl	bdl	bdl	bdl
Σtet.	6.083	6.088	6.073	6.003	5.979	5.996
Be	2.075	2.080	2.074	2.093	2.084	2.089
Li	0.925	0.920	0.926	0.907	0.916	0.911
ΣBe+Li	3.000	3.000	3.000	3.000	3.000	3.000
Al	1.951	1.947	1.961	2.050	2.090	2.049
Mg	bdl	bdl	bdl	bdl	bdl	bdl
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl	bdl
Mn	0.012	0.013	0.012	0.013	0.011	0.012
Sc	0.003	0.003	0.002	0.001	0.002	0.002
Σoct.	1.966	1.963	1.975	2.064	2.102	2.063
Na	0.041	0.029	0.067	0.064	0.062	0.090
K	0.011	0.011	0.013	0.009	0.009	0.010
Rb	0.067	0.065	0.071	0.069	0.069	0.065
<b>Cs</b>	<b>0.588</b>	<b>0.588</b>	<b>0.570</b>	<b>0.575</b>	<b>0.562</b>	<b>0.585</b>
Σchannel	0.707	0.693	0.721	0.717	0.702	0.750

Source Analysis	D. Blauwet			D. Blauwet		
	DB3-1	DB3-2	DB3-3	DB6-1	DB6-2	DB6-3
Oxides (wt.%)						
SiO <sub>2</sub>	57.38	57.20	57.31	56.68	56.59	56.92
TiO <sub>2</sub>	bdl	bdl	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	16.65	16.27	16.46	16.30	16.57	16.40
Sc <sub>2</sub> O <sub>3</sub>	0.03	0.03	0.02	0.02	0.02	0.02
BeO calc.	8.35	8.26	8.31	8.17	8.20	8.22
FeO	bdl	bdl	bdl	bdl	bdl	bdl
MnO	0.19	0.17	0.18	0.11	0.12	0.12
MgO	bdl	bdl	bdl	bdl	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.41	0.30	0.52	0.45	0.41	0.41
K <sub>2</sub> O	0.10	0.08	0.08	0.05	0.04	0.04
Rb <sub>2</sub> O	1.17	1.04	1.11	0.79	0.79	0.82
Cs <sub>2</sub> O	13.52	13.86	13.10	13.72	13.90	13.70
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72	1.72
Total	101.68	101.08	100.97	100.16	100.51	100.53
Ions per 18 oxygens, anhydrous basis						
Si	5.986	6.016	6.000	6.004	5.982	6.003
Ti	bdl	bdl	bdl	bdl	bdl	bdl
Σtet.	5.986	6.016	6.000	6.004	5.982	6.003
Be	2.094	2.086	2.090	2.080	2.082	2.084
Li	0.906	0.914	0.910	0.920	0.918	0.916
ΣBe+Li	3.000	3.000	3.000	3.000	3.000	3.000
Al	2.048	2.016	2.032	2.035	2.064	2.039
Mg	bdl	bdl	bdl	bdl	bdl	bdl
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl	bdl
Mn	0.017	0.015	0.016	0.010	0.010	0.011
Sc	0.003	0.002	0.002	0.002	0.002	0.001
Σoct.	2.067	2.034	2.049	2.047	2.077	2.051
Na	0.083	0.062	0.106	0.092	0.083	0.085
K	0.013	0.011	0.011	0.007	0.006	0.006
Rb	0.079	0.070	0.075	0.054	0.054	0.055
<b>Cs</b>	<b>0.601</b>	<b>0.621</b>	<b>0.585</b>	<b>0.620</b>	<b>0.626</b>	<b>0.616</b>
Σchannel	0.776	0.764	0.777	0.772	0.769	0.762

Source Analysis	F. Pezzotta			F. Pezzotta		
	4-1(FP-3)	4-2(FP-3)	4-3(FP-3)	5-1(FP-2)	5-1(FP-2)	5-1(FP-2)
Oxides (wt.%)						
SiO <sub>2</sub>	57.22	56.88	57.01	56.03	56.73	56.87
TiO <sub>2</sub>	bdl	bdl	bdl	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	16.17	15.30	16.69	16.45	16.98	16.46
Sc <sub>2</sub> O <sub>3</sub>	0.05	0.03	0.05	0.03	0.03	0.03
BeO calc.	8.19	8.01	8.25	8.08	8.27	8.21
FeO	bdl	bdl	bdl	bdl	bdl	bdl
MnO	0.12	0.15	0.18	0.15	0.15	0.12
MgO	bdl	bdl	bdl	bdl	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16	2.16	2.16	2.16
Na <sub>2</sub> O	0.33	0.30	0.43	0.42	0.31	0.35
K <sub>2</sub> O	0.05	0.09	0.08	0.01	0.00	0.00
Rb <sub>2</sub> O	0.85	0.67	0.78	0.65	0.82	0.78
Cs <sub>2</sub> O	11.29	11.41	11.23	13.50	13.43	12.97
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72	1.72	1.72	1.72
Total	98.14	96.71	98.58	99.17	100.59	99.67
Ions per 18 oxygens, anhydrous basis						
Si	6.050	6.111	6.001	5.984	5.962	6.007
Ti	bdl	bdl	bdl	bdl	bdl	bdl
Σtet.	6.050	6.111	6.001	5.984	5.962	6.007
Be	2.081	2.067	2.086	2.072	2.087	2.082
Li	0.919	0.933	0.914	0.928	0.913	0.918
ΣBe+Li	3.000	3.000	3.000	3.000	3.000	3.000
Al	2.015	1.937	2.070	2.070	2.103	2.049
Mg	bdl	bdl	bdl	bdl	bdl	bdl
Fe <sup>2+</sup>	bdl	bdl	bdl	bdl	bdl	bdl
Mn	0.010	0.014	0.016	0.013	0.013	0.011
Sc	0.004	0.002	0.005	0.003	0.002	0.003
Σoct.	2.029	1.953	2.091	2.086	2.119	2.063
Na	0.068	0.063	0.087	0.086	0.063	0.072
K	0.007	0.013	0.011	0.001	0.000	0.000
Rb	0.057	0.046	0.053	0.045	0.055	0.053
<b>Cs</b>	<b>0.509</b>	<b>0.523</b>	<b>0.504</b>	<b>0.615</b>	<b>0.602</b>	<b>0.584</b>
Σchannel	0.642	0.645	0.655	0.746	0.720	0.710

	Average (n=49)	Summary	
		Lowest Cs analysis	Highest Cs analysis
Oxides (wt.%)			
SiO <sub>2</sub>	56.77	57.01	56.27
TiO <sub>2</sub>	bdl	bdl	bdl
Al <sub>2</sub> O <sub>3</sub>	15.99	16.69	16.11
Sc <sub>2</sub> O <sub>3</sub>	0.03	0.05	0.01
BeO calc.	8.14	8.25	8.09
FeO	bdl	bdl	bdl
MnO	0.11	0.18	0.11
MgO	bdl	bdl	bdl
Li <sub>2</sub> O <sup>c</sup>	2.16	2.16	2.16
Na <sub>2</sub> O	0.41	0.43	0.26
K <sub>2</sub> O	0.11	0.08	0.10
Rb <sub>2</sub> O	0.85	0.78	0.77
Cs <sub>2</sub> O	13.55	11.23	15.13
H <sub>2</sub> O <sup>c</sup>	1.72	1.72	1.72
Total	99.84	98.58	100.74
Ions per 18 oxygens, anhydrous basis			
Si	6.029	6.001	6.004
Ti	bdl	bdl	bdl
Σtet.	6.029	6.001	6.004
Be	2.077	2.086	2.073
Li	0.923	0.914	0.927
ΣBe+Li	3.000	3.000	3.000
Al	2.002	2.070	2.026
Mg	bdl	bdl	bdl
Fe <sup>2+</sup>	bdl	bdl	bdl
Mn	0.010	0.016	0.010
Sc	0.003	0.005	0.001
Σoct.	2.014	2.091	2.037
Na	0.084	0.087	0.054
K	0.014	0.011	0.014
Rb	0.058	0.053	0.052
<b>Cs</b>	<b>0.614</b>	<b>0.504</b>	<b>0.688</b>
Σchannel	0.771	0.655	0.809

<sup>a</sup> The following were checked for by electron microprobe but were below the detection limits (shown in wt.%): CaO (0.07), Cr<sub>2</sub>O<sub>3</sub> (0.03), Bi<sub>2</sub>O<sub>3</sub> (0.03), V<sub>2</sub>O<sub>3</sub> (0.03), PbO (0.01), ZnO (0.08), BaO (0.03), Cl (0.04), F (0.05). The following standards were used (with specific energy line given in parentheses): Si (K $\alpha$ ), Al (K $\alpha$ ) = spessartine; Cs (L $\alpha$ ) = pollucite; Na (K $\alpha$ ), Mg (K $\alpha$ ), Ca (K $\alpha$ ), Fe (K $\alpha$ ), Ti (K $\alpha$ ) = clinopyroxene; Mn (K $\alpha$ ) = rhodonite; Rb (L $\alpha$ ) = synthetic Rb-leucite; K (K $\alpha$ ) = adularia; Sc (K $\alpha$ ) = thortveitite. Abbreviation: bdl = below detection limit.

<sup>b</sup> 5.08-mm-thick sample used for Vis-NIR spectroscopy.

<sup>c</sup> Values for lithium (by ICP) and water (by LOI) were measured for two samples (Simmons et al., 2003). The measured Li<sub>2</sub>O value was then used as the best approximation for calculating beryllium (Be+Li = 3) and the other ions in the ions per formula unit calculations for all samples. The H<sub>2</sub>O value is considered anomalously high due to the presence of microscopic tubules that are filled with an aqueous fluid (consistent with the granitic pegmatite environment). The low analytical totals (as calculated without water) are attributed to the abundance of these fluid-rich inclusions. Crystal structure refinement of one of the samples by one of the authors (FCH) indicated only 0.28 wt.% H<sub>2</sub>O in the channels.