

Major-element compositions of glass separates from Holocene tephra deposits, eastern Aleutian volcanic arc, Alaska.

Samples are grouped by locality (sites shown on accompanying index map). The eight major oxides reported here have been normalized to 100% to facilitate comparison among samples whose compositions differ mainly in the amount of post-eruption hydration or degree of vesicularity. The original summation (including MnO and prior to conversion of FeO) is included for those who wish to convert results to original values. Iron was originally reported as FeO but has been converted to Fe₂O₃ by multiplying FeO by 1.10. See discussion elsewhere on this website for explanation of analytical methods. Where thick, coarse-grained deposits occur in close proximity to a volcano, the volcano is named as the inferred source.

Sample	SiO₂	Al₂O₃	Fe₂O₃	MgO	CaO	TiO₂	Na₂O	K₂O	Original total	Source
Site 1										
5Rj125A	78.9	12.7	1.20							Black Peak
5Rj125B	63.1	15.4	7.39							Mt. Veniaminof
Site 2										
5Rj126A	64.8	15.8	5.70							
5Rj126B	62.4	16.4	6.88							Mt. Veniaminof
5Rj126C	58.8	16.4	8.87							Mt. Veniaminof
Site 3										
5Rj128D	62.9	16.3	6.86							
5Rj128C1	67.1	15.5	5.39							
5Rj128C2	60.6	16.1	7.62							
5Rj128C3	72.0	14.8	2.67							
5Rj128A	78.4	12.3	1.32							Black Peak
Site 4										
5Mm048E	63.8	15.5	7.21							
5Mm048C	66.4	16.1	5.37							
5Mm048B	77.5	12.9	1.25							
5Mm048A	64.3	16.0	6.11							
Site 5										
5M049A1	72.0	15.7	2.48							
5M049A2	59.6	17.4	7.25							
Sample	SiO₂	Al₂O₃	Fe₂O₃	MgO	CaO	TiO₂	Na₂O	K₂O	Original total	Source
Site 6										
5Mm047B	69.4	15.1	3.98							
5Mm047A	78.1	13.0	1.21							
Site 7										

5Rj121A	69.9	14.8	3.82							Aniakchak
5Rj121B	59.5	16.2	8.36							Aniakchak

Site 8

97-016-A1	62.3	17.3	5.95							
97-016-A2	65.1	15.8	6.15							
97-016-B	77.6	13.1	1.14							
97-016-C1	66.3	15.9	4.94							
97-016-C2	69.1	15.9	3.32							
97-016-D	69.3	15.2	3.89							
97-016-E	57.8	15.1	3.26							Aniakchak
97-016-F1	57.0	16.2	9.86							
97-016-F2	59.0	16.9	8.45							
97-022-A1	59.3	16.5	8.35							
97-022-A2	66.8	15.1	5.38							
97-022-B1	68.2	15.8	3.96							Aniakchak
97-022-B2	69.9	14.7	4.13	0.87	1.96	0.84	4.25	3.28		98.9% Aniakchak
97-022-B3	66.1	17.9	3.34	1	3.82	0.55	5.08	2.15		98.7% Aniakchak
97-022-C1	59.8	16.8	7.76							
97-022-C2	66.8	15.2	5.19							

Site 9

5Rj130C	77.8	12.7	1.18
5Rj130B	71.4	14.6	3.58
5Rj130A	66.5	15.1	5.38

Site 10

5Rj129G1	64.5	15.6	6.28							
5Rj129G2	69.3	15.0	4.71							
5Rj129F	71.0	14.2	3.87							Aniakchak
5Rj129E	70.1	14.4	3.93							Aniakchak
5Rj129D	69.5	14.9	3.81							Aniakchak
5Rj129C	69.6	14.9	3.92							Aniakchak
5Rj129B	56.6	16.7	10.40							
5Rj129A	71.6	14.9	2.64							

Sample SiO2 Al2O3 FeTO3 MgO CaO TiO2 Na2O K2O Original total Source

Site 11

2Rj059E1	59.3	15.9	8.30
2Rj059E2	69.5	14.8	3.93
2Rj059E3	71.6	15.2	2.71

2Rj059D1	69.4	15.1	3.88
2Rj059D2	64.3	15.9	5.73
2Rj059C	61.5	15.8	7.58
2Rj059B	69.0	15.0	4.00
2Rj059A	60.6	15.9	8.09

Site 12

3Rj195C2	71.1	15.3	2.69
3Rj195C3	71.2	15.1	2.67

Site 13

2Rj037L	64.7	16.0	5.55
2Rj037K	65.2	16.5	5.41
2Rj037A	65.5	15.7	5.35
2Rj037B	72.8	14.3	2.70
2Rj037J	59.0	16.1	8.95
2Rj037I	66.2	15.6	5.43
2Rj037C	71.5	15.1	2.57
2Rj037D	60.5	15.6	8.17
2Rj037E1	71.4	15.0	2.56
2Rj037E2	58.6	16.3	8.51
2Rj037F	67.7	15.4	4.47
2Rj037G	66.4	16.2	4.99
2Rj037H1	69.8	15.3	3.76
2Rj037H2	58.3	16.4	9.11

Aniakchak

Aniakchak

Aniakchak

Aniakchak

Aniakchak

Aniakchak

Aniakchak

Site 14

2Rj025E	68.4	15.2	4.00
2Rj025B	78.3	11.9	1.05
2Rj025A	77.4	12.5	0.99

Mt. Chiginagak

Site 15

2Rj065G1	75.9	12.6	1.94
2Rj065G2	66.2	14.9	5.32
2Rj065F	69.8	15.1	3.76
2Rj065E1	58.6	16.8	8.04
2Rj065E2	69.8	15.3	3.34
2Rj065D	76.5	12.0	2.19
2Rj065C	76.1	12.5	2.04
2Rj065B1	61.6	15.2	7.80
2Rj065B2	65.7	15.2	5.74
2Rj065A1	63.5	15.0	7.11

Mt. Chiginagak

Mt. Chiginagak

Mt. Chiginagak

2Rj065A2 69.6 14.9 3.69

Sample SiO2 Al2O3 FeTO3 MgO CaO TiO2 Na2O K2O Original total Source

Site 16

2Rj054A 59.8 15.6 8.63

2Rj054B 60.6 16.1 7.31

Mt. Chiginagak

Site 17

2Rj020F 71.9 14.6 2.64

2Rj020E1 58.2 16.4 9.28

2Rj020E2 68.5 15.9 4.38

2Rj020E3 78.3 12.6 1.14

2Rj020E4 63.1 16.3 6.24

2Rj020E5 69.2 14.3 5.11

2Rj020D 61.4 15.3 8.39

2Rj020C 71.1 15.0 2.60

2Rj020B 59.2 16.4 7.94

2Rj020A 59.4 15.9 8.60

Site 18

2Rj017C 66.0 15.9 5.37

2Rj017D 72.7 15.1 2.64

2Rj017E 77.6 13.3 1.19

2Rj017F1 57.7 16.0 9.72

2Rj017F2 61.7 14.7 8.96

2Rj017G1 59.7 16.0 9.02

2Rj017G2 64.8 15.7 6.32

2Rj017H1 59.0 16.0 8.77

2Rj017H2 61.1 15.8 7.82

Site 19

2Rj060A 61.4 15.6 8.00

2Rj060B1 66.1 15.7 6.09

2Rj060B2 71.5 13.9 4.05

2Rj060C 62.9 15.3 7.38

2Rj060D 62.7 15.2 7.41

2Rj060E 63.2 15.5 7.33

2Rj060F 61.7 16.1 7.79

2Rj060G1 60.9 15.7 8.39

2Rj060G2 62.8 15.5 7.49

2Rj060H 62.4 15.2 7.71

2Rj060I 62.0 15.9 7.53

2Rj060J	61.2	16.3	8.01
2Rj060K	61.4	15.5	8.10
2Rj060L	59.4	15.7	9.03
2Rj060M	71.2	15.3	2.58
2Rj060N	66.4	16.3	5.00
2Rj060o	61.3	15.7	7.74

Site 20

5Rj122J1	63.0	15.3	7.44
5Rj122J2	64.7	15.4	6.55
5Rj122I1	64.1	15.3	6.86
5Rj122I2	61.8	15.3	7.98
5Rj122H	62.7	15.8	7.18
5Rj122G	65.2	15.5	5.67
5Rj122F	65.2	15.4	5.74
5Rj122K1	59.4	15.6	8.97
5Rj122K2	65.0	15.8	5.57
5Rj122D	71.9	14.9	2.58
5Rj122C	65.2	15.7	5.45
5Rj122L	71.8	14.9	2.66
5Rj122B	59.6	16.0	8.83
5Rj122A1	59.8	16.3	8.04
5Rj122A2	71.6	14.7	2.89
5Rj122A3	65.0	15.7	4.83

Aniakchak

Sample SiO2 Al2O3 FeTO3 MgO CaO TiO2 Na2O K2O Original total Source

Site 21

5Rj123B	59.4	16.3	8.41
5Rj123A1	66.7	15.4	4.88
5Rj123A2	70.3	15.6	3.10

Site 22

2Rj073L1	61.4	15.8	7.67
2Rj073L2	67.0	15.6	5.18
2Rj073K	72.6	15.1	2.76
2Rj073J	58.5	16.1	9.36
2Rj073I	71.6	15.0	2.61
2Rj073G1	71.5	15.0	2.61
2Rj073G2	69.1	14.6	4.22
2R073H	71.0	15.6	2.48
2Rj073F	72.6	14.8	2.65

Aniakchak

Aniakchak

Aniakchak

Aniakchak

Aniakchak

2R073E1	58.6	15.7	8.81	Aniakchak
2Rj073E2	72.3	14.9	2.82	Aniakchak
2Rj073C1	58.1	16.8	8.86	
2Rj073C2	69.7	15.8	3.65	
2Rj073B	60.0	15.9	8.33	
2Rj073A1	67.9	15.9	4.20	
2Rj073A2	70.2	15.7	3.35	

Site 23

2Rj029E	59.1	16.8	8.37
2Rj029D	61.0	16.1	8.16
2Rj029C	60.5	16.5	8.04
2R029B	64.0	16.0	6.09
2Rj029A1	77.2	13.0	1.23
2Rj029A2	60.0	16.0	8.19

Site 24

5Rj028A	55.6	16.0	11.20
5Rj028C	62.1	17.0	6.54

Mt. Peulik

Site 25

2R031D	74.0	14.8	1.56
2Rj031C	55.9	15.5	11.16
2Rj031B1	59.2	16.4	7.98
2Rj031B2	61.6	15.8	6.87
2Rj031A	60.8	15.9	7.88

Sample SiO2 Al2O3 FeTO3 MgO CaO TiO2 Na2O K2O Original total Source

Site 26

2Rj032J1	60.6	16.3	7.98
2Rj032J2	58.2	14.8	10.18
2Rj032I	61.7	16.7	7.36
2Rj032H	60.2	16.6	7.21
2Rj032G	71.3	14.9	2.77
2Rj032F	71.2	15.1	2.60
2Rj032E1	59.4	16.1	8.48
2Rj032E2	62.3	15.9	7.32
2Rj032E3	69.4	15.0	3.89
2Rj032D1	59.0	16.1	8.80
2Rj032D2	67.1	15.5	4.80
2Rj032C1	59.2	15.9	8.65
2Rj032C2	68.7	14.8	4.35

2Rj032B1	60.4	15.6	8.34
2Rj032B2	67.6	15.1	4.87

Site 27

6Rj130C	70.4	16.0	2.68
6Rj130B1	66.4	15.6	4.80
6Rj130B2	60.6	16.0	7.71
6Rj130A	64.0	16.1	6.46

Site 28

3Rj230I	63.8	16.2	5.88
3Rj230H1	68.5	15.1	4.53
3Rj230H2	74.9	12.9	2.36
3Rj230E	59.7	16.7	8.77
3Rj230D	70.0	16.2	2.61
3Rj230C	69.2	15.1	3.71
3Rj230B	59.5	16.7	8.16
3Rj230A	59.5	16.4	8.29

Site 29

6Rj123C	71.8	14.8	2.65
---------	------	------	------

Site 30

4Rj131A1	59.9	15.9	8.24
4Rj131A2	65.0	16.7	5.00

Sample	SiO2	Al2O3	FeTO3	MgO	CaO	TiO2	Na2O	K2O	Original total	Source
---------------	-------------	--------------	--------------	------------	------------	-------------	-------------	------------	-----------------------	---------------

Site 31

8Rj104H1	72.6	14.2	3.11
8Rj104H2	75.0	13.5	2.52
8Rj104G	70.6	14.8	4.24
8Rj104F	70.0	14.9	4.35
8Rj104E1	59.3	16.4	8.83
8Rj104E2	76.3	13.0	1.85
8Rj104C	77.2	12.6	1.58
8Rj104B	75.2	13.4	2.28
8Rj104A	65.7	16.4	4.97

Site 32

91R016A1	70.2	14.7	3.70
91R016A2	73.6	12.9	3.40
91R016A3	68.1	14.0	5.70
91R016B1	67.7	13.3	6.28
91R016B2	72.7	13.6	3.10

91R016B3	72.9	14.2	2.52
91R016B4	61.9	15.7	7.14
91R016C	73.1	13.5	2.89
91R016D1	75.6	13.4	1.48
91R016D2	76.1	12.5	2.17
91R016D3	59.4	16.3	8.05
91R016D4	68.2	15.6	4.10
91Rj016E1	73.8	13.4	2.77
91R016E2	78.0	12.2	1.69
91Rj016F1	77.2	12.3	1.78
91R016F2	77.4	12.2	1.82
91Rj016F3	64.8	14.9	7.00
91R016G1	58.0	16.2	9.21
91R016G2	75.3	12.5	2.63
91R016G3	72.5	13.6	3.45
91R016G4	78.0	11.8	1.70
91R016G5			
91Rj016H	76.5	12.4	2.08
9Rj016J1	76.4	12.8	2.07
91R016J2	73.3	12.6	3.11
91Rj016K1	75.5	12.6	2.62
91R016K2	77.6	11.4	2.02
91R016K3	73.5	13.9	2.05
91Rj016L1	67.7	14.7	5.44
91R016L2	76.7	11.5	2.80
91R016L3	76.7	13.8	1.05
Site 33			
5Rj192A	73.7	13.3	2.54
5Rj186A	71.5	14.2	3.35
5Rj186B	72.4	13.4	3.46
Site 34			
NL4-B1	65.8	15.8	5.58
Site 35			
9Rj100D	75.3	13.3	2.14
9Rj100E1	64.1	15.4	6.46
9Rj100E2	72.5	14.6	2.37
9Rj100F	69.9	15.3	3.57
9Rj100H	65.8	15.8	5.50

Mt. Griggs

Mt. Griggs

Mt. Griggs

9R102C1	69.3	14.7	4.11
9R102C2	60.5	14.9	8.95
9Rj102E	63.9	16.2	6.12
9R103B1	72.5	14.0	3.35
9R103B2	76.7	12.8	1.91
9Rj103C1	71.6	14.0	3.70
9Rj103C2	66.4	15.2	5.70

Sample SiO2 Al2O3 FeTO3 MgO CaO TiO2 Na2O K2O Original total Source

Site 36

4Rj061	72.7	13.5	3.24
--------	------	------	------

Site 37

5Rj097	69.3	15.0	3.82
--------	------	------	------

Site 38

BL-B1	77.7	12.8	1.06
BL-B2	76.8	13.0	1.13
BL-B3	74.0	13.8	2.30
LC-A	56.9	16.2	10.00
KR-B1	60.2	16.5	7.90
KR-B2	70.5	15.3	3.33

Site 39

3Rj215B	75.8	12.5	2.17
3Rj215A1	59.0	16.4	8.97
3Rj215A2	67.3	16.4	3.98
3Rj215A3	63.6	15.7	6.55

Site 40

7Rj004C1	77.0	13.0	1.59
7Rj004C2	71.3	15.0	3.07
7Rj004B1	69.8	16.3	3.19
7Rj004B2	67.9	14.5	5.22
7R004A1	78.0	12.5	1.59
7R004A2	64.3	15.4	6.58
7Rj004D1	76.4	14.1	1.83
7Rj004D2	75.2	13.1	2.30

Sample SiO2 Al2O3 FeTO3 MgO CaO TiO2 Na2O K2O Original total Source

Site 41

7Rj009G	77.9	12.5	1.57
7Rj009D	75.7	13.5	1.92
7Rj009A	70.0	14.6	4.01

Site 42

7Rj010J	77.4	12.6	1.70
7Rj010I	76.8	13.2	1.69
7Rj010H	70.7	15.5	2.82
7Rj010G	77.9	12.5	1.58
7Rj010F1	77.1	13.5	1.39
7Rj010F2	65.1	16.8	4.88
7R010D1	74.8	14.6	1.43
7R010D2	64.7	15.7	6.50
7R010C1	79.4	11.9	1.03
7R010C2	76.6	12.1	2.53
7Rj010B1	67.9	15.5	5.08
7Rj010B2	62.3	15.6	7.84
7Rj010A1	71.2	14.3	3.70
7Rj010A2	65.7	15.2	5.90

Site 43

RBWko9C	77.0	12.9	1.72
RBWko9F	76.8	13.0	1.67
RBWko9I	77.1	13.3	1.44
RBWko9K	77.0	13.3	1.46

Site 44

4Rj152	77.8	12.2	1.66
--------	------	------	------

Kaguyak Crater

Site 45

9Rj002A	65.8	14.7	6.01
9Rj002B1	76.9	13.3	1.62
9Rj002B2	67.0	14.8	4.76
9Rj002C1	76.9	12.8	1.93
9Rj002C2	77.0	13.0	1.63
9Rj002E1	64.3	15.8	6.16
9Rj002E2	74.5	13.8	2.10
9Rj002F1	64.4	16.3	5.68
9Rj002F2	74.4	13.2	2.97
9Rj002G	75.6	14.0	1.01

Sample	SiO2	Al2O3	FeTO3	MgO	CaO	TiO2	Na2O	K2O	Original total	Source
---------------	-------------	--------------	--------------	------------	------------	-------------	-------------	------------	-----------------------	---------------

Site 46

9Rj003B	77.1	12.8	1.71
9Rj003C	77.1	13.2	1.54

9Rj003F1 70.5 14.5 3.96

9Rj003F2 77.2 12.3 1.86

Site 47

9R004A1 59.7 16.5 8.02

9R004A2 67.1 16.0 4.44

9Rj004B 76.9 12.8 1.72

9Rj004D 77.4 12.8 1.77

Site 48

RBW75A 77.2 12.7 1.72

Augustine
Volcano

RBW33B 77.0 12.9 1.70

Augustine
Volcano

RBW33D 77.3 12.8 1.64

Augustine
Volcano

CG91-41A 76.6 13.1 1.87

Augustine
Volcano

Site 49

9Rj001A 76.4 13.1 1.85

9Rj001B 76.2 13.3 1.99

9Rj001C 77.5 13.0 1.63

Augustine
Volcano

9Rj001D 77.2 12.6 1.58

Augustine
Volcano

9Rj001E 77.3 13.0 1.59

Augustine
Volcano

9Rj001F2 77.6 13.0 1.49

Augustine
Volcano

9Rj001I1 77.0 13.2 1.47

Augustine
Volcano

9Rj001I2 77.3 13.1 1.54

Augustine
Volcano

9Rj001K4 77.5 13.0 1.29

9Rj001K3 76.9 13.5 1.24

**Site 50 (Circle
Pond core)**

C 75.8 13.7 1.66

F 74.8 14.1 2.07

G 77.8 12.6 1.84

I 78.2 12.4 1.64

J 77.8 12.8 1.26

K1	75.5	13.5	1.83
K2	69.8	15.6	2.97