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Crystal chemistry of ferromagnesian silicate spinels: Evidence for Mg-Si disorder

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For deposit: Table 2

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Table 2A

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Sample number mgsisp1 Mg2SiO4

h	k	l	Fo	Fc	Sg
1	1	1	19.0	12.7	-18.68
0	2	2	483.4	489.0	4.22
2	2	2	290.8	203.8	-3.22
1	1	3	746.0	746.0	6.20
1	3	3	148.1	152.8	2.72
3	3	3	708.7	694.1	6.12
0	0	4	1268.0	1226.6	10.32
2	2	4	380.9	375.2	3.90
0	4	4	1588.2	1570.8	12.96
2	4	4	28.1	15.0	17.56
4	4	4	653.4	662.8	5.92
1	1	5	491.0	491.6	4.62
1	3	5	9.9	19.2	-49.50
3	3	5	495.3	499.2	4.80
1	5	5	63.5	66.2	4.04
3	5	5	363.0	364.3	4.18
5	5	5	251.4	257.4	3.96
0	2	6	318.2	319.7	3.80
2	2	6	33.9	22.3	9.22
2	4	6	288.5	290.8	3.86
4	4	6	26.9	9.8	-22.08
0	6	6	266.1	264.9	4.04
2	6	6	42.7	27.1	13.34
4	6	6	206.4	212.9	4.24
6	6	6	27.3	6.2	-31.18
1	1	7	72.8	73.8	4.12
1	3	7	483.3	485.0	4.94
3	3	7	99.5	103.7	4.28
1	5	7	367.8	368.9	4.46
3	5	7	39.6	37.7	7.86
5	5	7	12.0	11.7	-60.12
1	7	7	66.8	68.4	4.94
3	7	7	360.7	357.3	4.84
5	7	7	289.2	283.9	4.86
0	0	8	1079.0	1067.4	9.20
2	2	8	251.3	253.8	4.18
0	4	8	438.0	441.4	4.84
2	4	8	11.5	17.1	-57.74
4	4	8	801.8	800.3	7.34
2	6	8	194.6	196.1	4.44
4	6	8	12.5	13.6	-62.50
0	8	8	639.7	632.7	6.50
1	1	9	61.7	61.7	4.90
1	3	9	271.4	273.6	4.28
3	3	9	12.0	14.8	-59.88
1	5	9	196.9	195.3	4.46
3	5	9	53.1	56.0	6.20
0	2	10	200.1	204.8	4.34
2	2	10	26.9	6.3	-26.80
2	4	10	174.9	173.1	4.72
1	1	11	286.0	286.6	4.74

Items with Sg<0 are Rejected

Table 2B.

Sample number 1013sp3 (Mg.4,Fe.6)2SiO4

h	k	l	Fo	Fc	Sg
1	1	1	380.6	380.8	2.70
0	2	2	503.7	500.9	3.52
2	2	2	405.8	465.4	-3.16
1	1	3	1098.9	1095.2	6.94
1	3	3	480.5	475.0	3.64
3	3	3	1023.6	1013.3	6.66
0	0	4	1842.6	1843.6	11.42
2	2	4	381.2	377.3	3.32
0	4	4	2054.4	2079.3	12.76
2	4	4	46.3	22.4	7.64
4	4	4	1068.9	1076.1	7.08
1	1	5	734.1	734.8	5.06
1	3	5	239.3	245.4	3.20
3	3	5	727.5	731.7	5.20
1	5	5	115.9	111.1	4.14
3	5	5	564.2	554.6	4.58
5	5	5	421.3	421.0	4.24
0	2	6	312.8	317.8	3.46
2	2	6	483.7	481.8	4.06
2	4	6	310.7	311.4	3.70
4	4	6	9.8	13.9	-48.80
0	6	6	300.8	300.9	3.92
2	6	6	398.3	399.4	4.20
4	6	6	209.6	207.5	4.26
6	6	6	332.5	329.8	4.50
1	1	7	292.0	292.4	3.60
1	3	7	715.1	716.7	5.30
3	3	7	313.8	318.9	3.88
1	5	7	558.5	557.8	4.74
3	5	7	206.3	205.5	4.16
5	5	7	126.9	132.4	5.14
1	7	7	242.3	239.5	4.34
3	7	7	550.3	553.0	5.04
5	7	7	451.8	445.7	4.90
0	0	8	1430.5	1450.7	9.24
2	2	8	264.5	269.2	3.92
0	4	8	762.7	761.1	5.72
2	4	8	10.0	24.6	-50.10
4	4	8	1126.0	1118.8	7.72
2	6	8	205.0	205.4	4.52
4	6	8	11.2	19.0	-54.62
0	8	8	918.0	909.9	6.84
2	8	8	36.8	35.9	24.72
1	1	9	83.1	81.3	6.04
1	3	9	433.0	433.1	4.48
3	3	9	123.2	122.9	5.10
1	5	9	340.1	340.0	4.44
3	5	9	69.1	69.2	8.42
5	5	9	11.3	23.9	-56.60
1	7	9	104.8	106.2	6.42
0	2	10	222.5	229.2	4.50
2	2	10	324.3	330.7	4.48
2	4	10	178.7	179.7	4.92
4	4	10	35.2	8.1	17.54
1	1	11	453.9	454.0	4.90
1	3	11	199.2	199.5	5.00

Items with Sg<0 are Rejected

Table 2C

Sample number 1097sp1 (Mg.2Fe.8)2SiO4

h	k	l	Fo	Fc	Sg
1	1	1	483.3	484.5	4.58
0	2	2	502.3	501.5	4.88
2	2	2	601.1	650.1	-5.78
1	1	3	1189.0	1191.4	10.88
1	3	3	572.2	563.9	5.64
3	3	3	1118.7	1096.3	10.38
0	0	4	2011.2	2017.9	18.22
2	2	4	384.0	377.5	4.32
0	4	4	2178.8	2221.2	19.78
2	4	4	40.7	24.8	7.58
4	4	4	1209.1	1197.1	11.30
1	1	5	807.2	802.7	7.68
1	3	5	303.8	312.0	4.10
3	3	5	792.2	797.0	7.74
1	5	5	164.4	162.5	4.08
3	5	5	618.2	607.0	6.52
5	5	5	462.0	462.8	5.64
0	2	6	309.1	317.9	4.18
2	2	6	615.2	609.0	6.30
2	4	6	311.2	311.6	4.52
4	4	6	13.0	15.6	-65.16
0	6	6	299.5	300.9	4.76
2	6	6	503.6	502.8	5.86
4	6	6	212.2	207.6	4.76
6	6	6	422.2	420.1	5.88
1	1	7	350.6	355.6	4.58
1	3	7	777.4	777.9	7.74
3	3	7	374.0	377.7	4.98
1	5	7	605.5	610.1	6.58
3	5	7	258.0	257.1	4.74
5	5	7	180.2	177.4	5.10
1	7	7	290.3	289.2	5.02
3	7	7	606.3	601.3	6.86
5	7	7	499.4	490.5	6.40
0	0	8	1539.8	1557.9	14.26
2	2	8	265.2	269.3	4.68
0	4	8	856.9	857.9	8.54
2	4	8	32.3	27.5	21.30
4	4	8	1218.2	1207.9	11.64
2	6	8	207.8	205.4	4.98
4	6	8	14.4	21.4	-72.04
0	8	8	992.5	988.0	9.96
2	8	8	39.7	40.1	23.84
1	1	9	125.0	124.6	4.80
1	3	9	471.9	477.6	5.82
3	3	9	165.0	168.0	4.96
1	5	9	378.4	377.2	5.50
3	5	9	113.8	107.7	5.76
5	5	9	41.3	53.4	20.62
1	7	9	147.1	146.7	5.72
0	2	10	224.7	229.3	5.08
2	2	10	412.2	420.9	5.60
2	4	10	181.0	179.8	5.28
4	4	10	14.6	9.3	-72.94
1	1	11	492.5	498.7	6.28
1	3	11	242.3	243.6	5.48

Items with Sg<0 are Rejected

Table. 2-D

Sample number 1102sp3 (Mg.2Fe.8)2SiO4

h	k	l	Fo	Fc	Sg
1	1	1	482.4	483.1	3.04
0	2	2	504.8	503.6	4.10
2	2	2	578.5	637.8	-4.02
1	1	3	1191.1	1185.1	5.18
1	3	3	556.5	554.2	4.42
3	3	3	1077.8	1083.6	5.40
0	0	4	2014.5	2007.1	7.94
2	2	4	374.3	375.2	4.78
0	4	4	2224.8	2206.1	8.86
2	4	4	40.8	28.6	-74.14
4	4	4	1175.9	1183.0	6.34
1	1	5	796.7	798.8	5.06
1	3	5	295.7	306.5	5.80
3	3	5	774.9	785.2	5.56
1	5	5	174.9	160.1	8.24
3	5	5	604.5	600.8	5.84
5	5	5	448.8	457.5	6.42
0	2	6	307.0	313.2	6.00
2	2	6	595.7	590.6	5.54
2	4	6	309.2	312.3	6.78
4	4	6	22.7	17.3	-118.16
0	6	6	307.2	305.5	7.16
2	6	6	481.2	480.5	6.48
4	6	6	205.5	200.6	8.92
6	6	6	404.3	395.0	7.40
1	1	7	339.3	346.7	6.08
1	3	7	753.3	763.6	5.96
3	3	7	358.6	364.9	6.94
1	5	7	597.5	599.4	6.46
3	5	7	241.9	244.9	8.16
5	5	7	163.2	171.9	10.06
1	7	7	280.3	274.7	8.52
3	7	7	588.0	583.9	7.18
5	7	7	480.7	471.8	7.64
0	0	8	1530.3	1538.4	7.86
2	2	8	253.4	267.8	7.84
0	4	8	840.4	841.5	6.54
2	4	8	19.7	31.4	-99.82
4	4	8	1191.7	1187.1	7.54
2	6	8	208.6	202.3	9.72
4	6	8	22.1	23.6	-110.32
0	8	8	978.1	966.1	8.06
2	8	8	44.4	45.4	-64.54
1	1	9	116.7	119.2	10.58
1	3	9	463.0	467.0	6.86
3	3	9	163.2	156.6	10.36
1	5	9	368.8	370.2	8.04
3	5	9	93.8	103.1	14.14
5	5	9	22.5	49.8	-112.60
1	7	9	141.0	137.5	12.44
0	2	10	233.3	229.7	9.08
2	2	10	392.1	397.2	7.58
2	4	10	172.2	175.4	10.68
4	4	10	22.9	9.5	-114.68
1	1	11	483.6	484.9	7.50
1	3	11	236.4	230.3	10.00

Items with Sg<0 are Rejected