

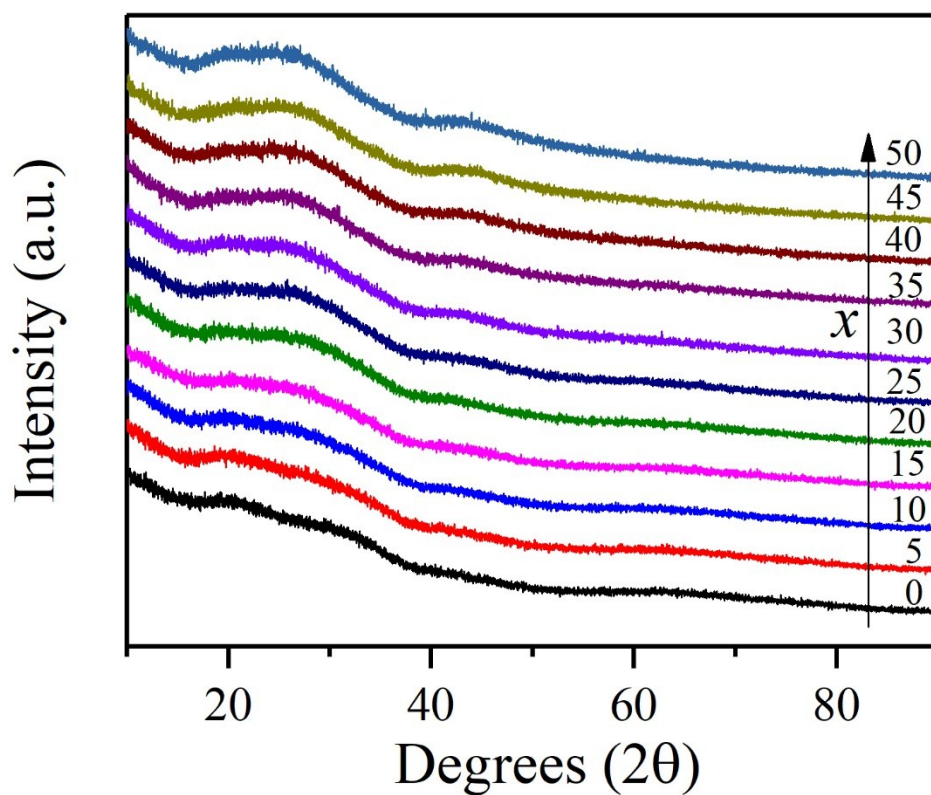


Figure S1: X-ray diffraction verification of the amorphous nature of the as-melted glass compositions.

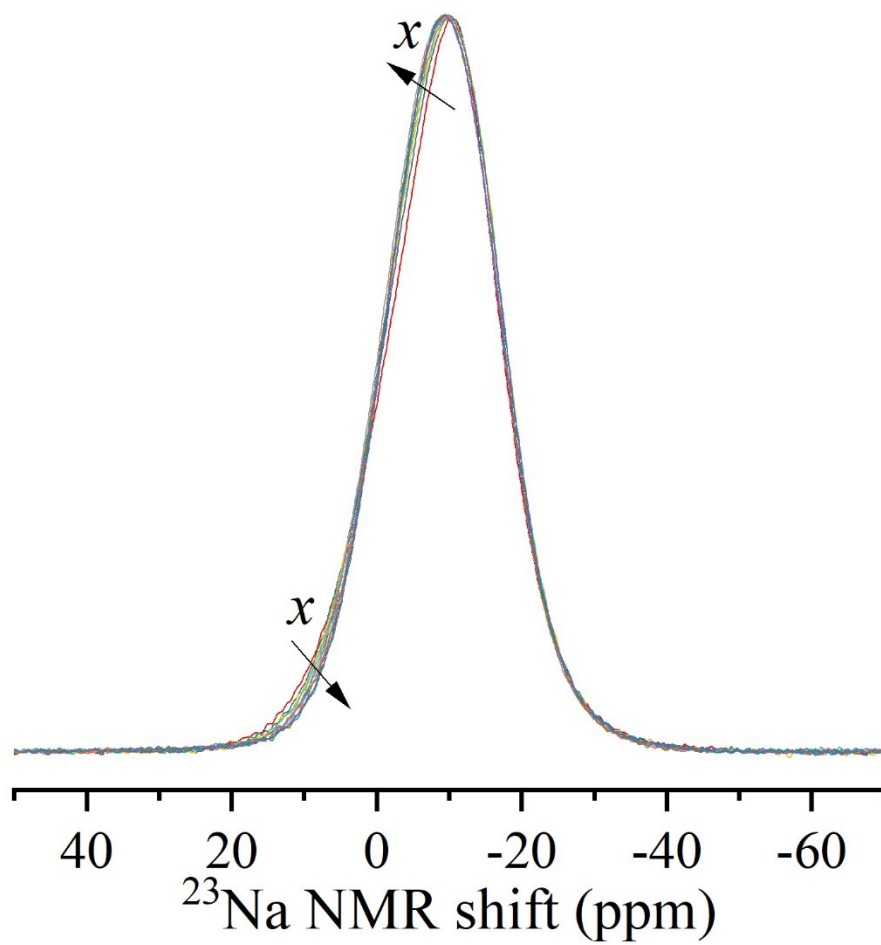
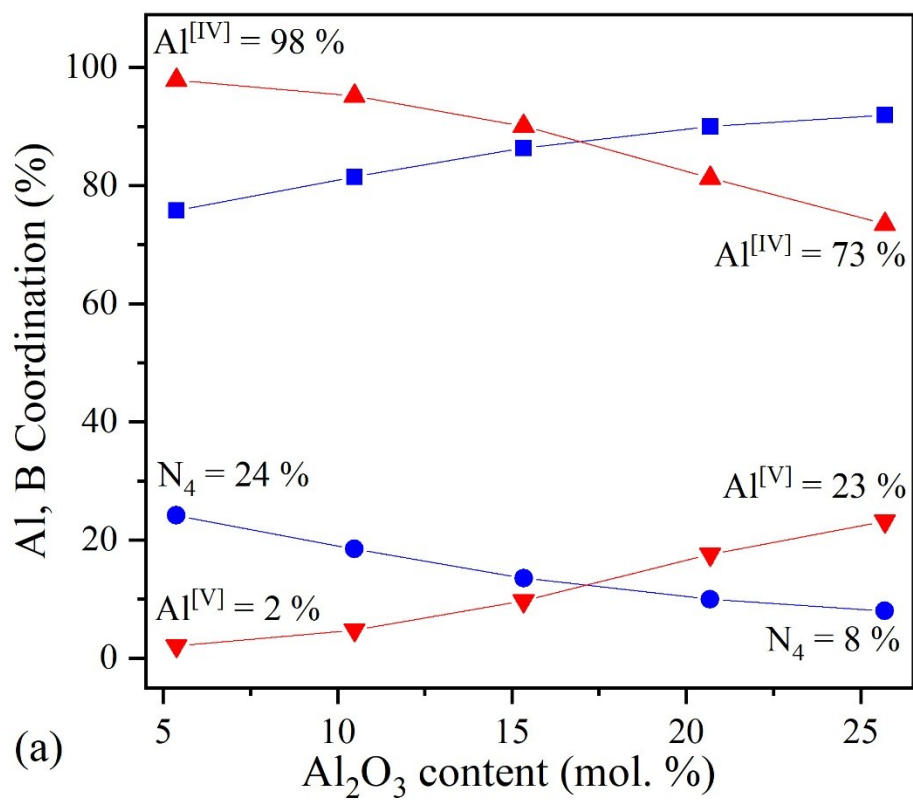


Figure S2. ^{23}Na MAS NMR spectra of the as-synthesized glasses.



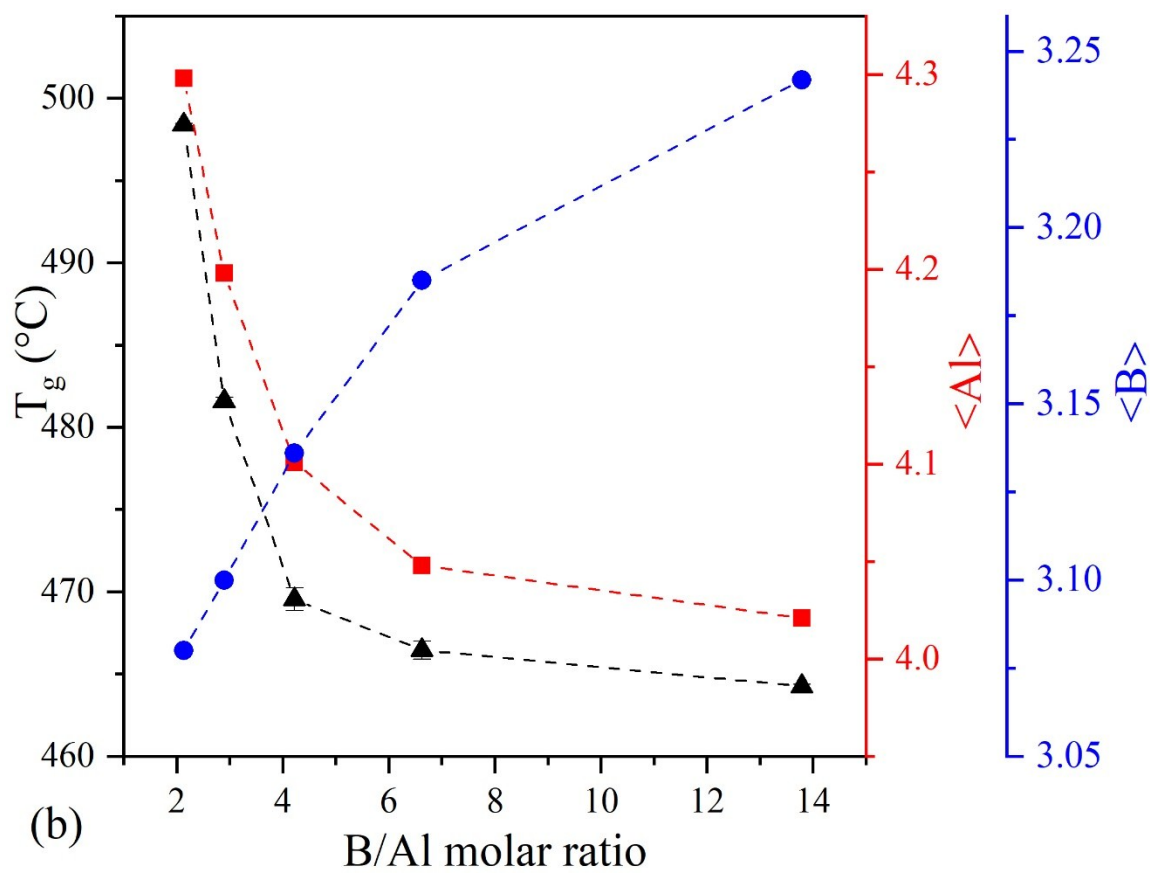


Figure S3: (a) Al and B coordination changes (%) in the previously studied $20 \text{ Na}_2\text{O}-x \text{ Al}_2\text{O}_3-(80-x) \text{ B}_2\text{O}_3$ glass system as a function of Al_2O_3 content (mol. %). (b) T_g and average Al and B coordination across the same sodium aluminoborate series as a function of B/Al molar ratio. T_g is displayed on the left axis and average B and Al coordination are both shown on the right axes.

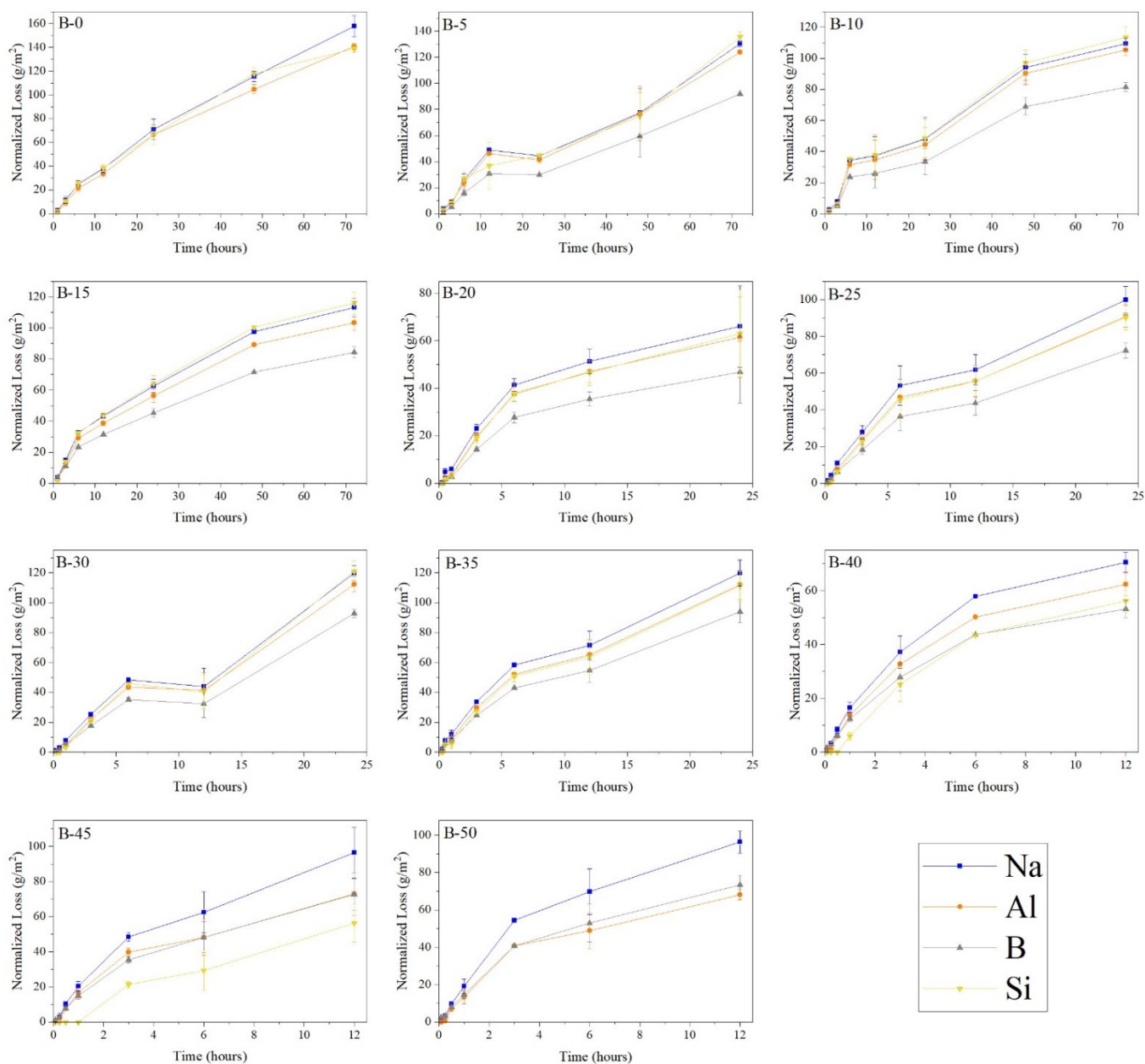


Figure S4: Plots of normalized loss (g/m²) of each element present in the glass as a function of time (hours) for all studied glasses.

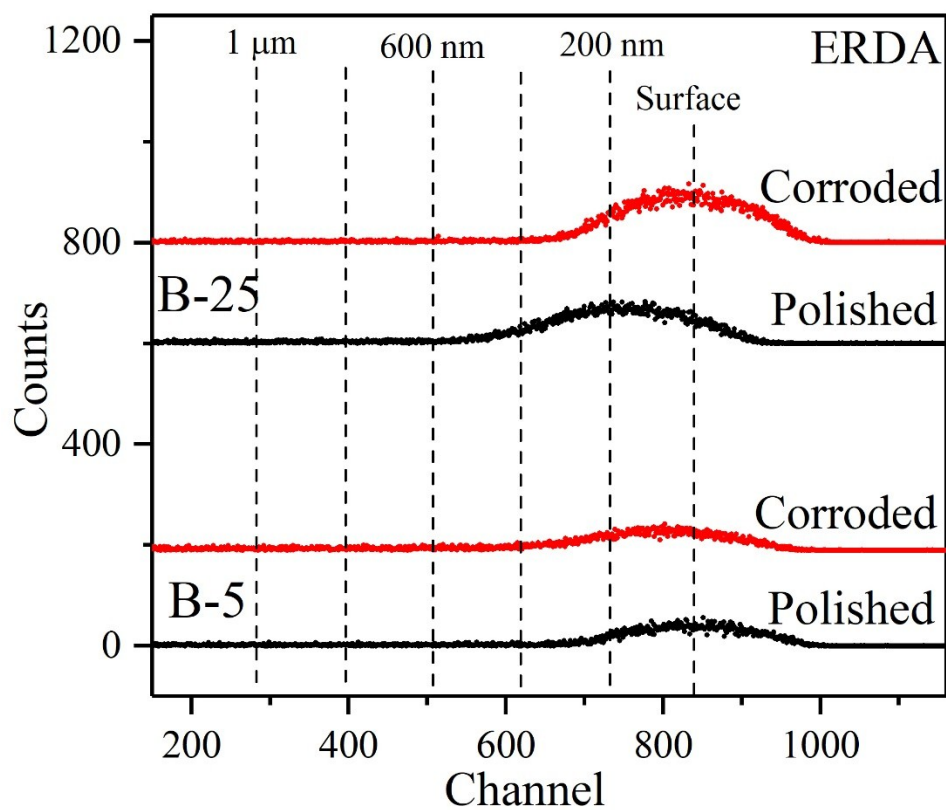


Figure S5: ERDA spectra of polished and corroded B-5 and B-25 glass coupons. The corroded samples were immersed in pH 2 solution for 3 days and 1 day, respectively.

Table S1. Fitting
NMR spectra.

parameters of ^{23}Na MAS

Sample ID	^{23}Na MAS NMR	
	δ_{iso} (ppm)	C_q (MHz)
B-0	*	*
B-5	*	*
B-10	-7.0	1.7
B-15	-6.6	1.8
B-20	-6.3	1.8
B-25	-5.9	1.9
B-30	-5.8	2.0
B-35	-5.7	2.0
B-40	-5.6	2.0
B-45	-5.5	2.1
B-50	-5.5	2.1

* Note: Samples were unable to be fit using the CZSimple model in DMFit.

Table S2. Average concentration (ppm), averaged normalized loss (g/m^2), and pH as a function of time (h) for all glasses in pH 2 solutions. The reported errors are calculated 1σ standard deviation for duplicate samples.

B-0		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
1	2.01±0.03	1.0	±0.1	0.6	±0.2	--	--	1.0	±0.2	2.4	±0.2	1.2	±0.4	--	--	2.1	±0.5
3	2.07±0.00	4.6	±1.1	4.4	±1.2	--	--	5.1	±1.5	11.5	±2.7	9.0	±2.4	--	--	10.6	±3.0
6	2.04±0.01	10.0	±1.1	10.5	±1.5	--	--	12.1	±1.6	24.7	±2.8	21.5	±3.0	--	--	25.0	±3.3
12	2.11±0.03	15.3	±1.3	16.4	±1.3	--	--	18.5	±1.3	37.9	±3.3	33.5	±2.7	--	--	38.3	±2.8
24	2.16±0.05	28.6	±3.5	32.6	±4.1	--	--	31.9	±3.9	70.9	±8.7	66.6	±8.3	--	--	66.3	±8.1
48	2.29±0.08	46.7	±1.8	51.2	±1.9	--	--	56.7	±2.4	115.6	±4.6	104.7	±3.9	--	--	117.6	±5.1
72	2.38±0.18	63.7	±3.6	68.9	±1.2	--	--	67.0	±1.6	157.7	±8.9	140.7	±2.5	--	--	139.1	±3.3
B-5		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
1	2.00±0.02	1.5	±0.7	1.0	±0.7	<0.2	--	1.3	±0.6	3.6	±1.7	2.2	±1.5	--	--	3.0	±1.3
3	2.07±0.01	3.6	±0.4	3.7	±0.6	0.2	±0.0	3.7	±0.6	8.9	±1	7.8	±1.3	5.0	±0.2	8.5	±1.4
6	2.06±0.01	10.5	±1.8	11.4	±2.0	0.6	±0.1	11.6	±2.3	26.0	±4.5	23.8	±4.2	15.9	±2.2	26.7	±5.4
12	2.11±0.04	19.8	±0.2	21.9	±0.1	1.2	±0.1	15.9	±7.8	49.0	±0.5	45.9	±0.1	30.7	±1.5	36.7	±17.9
24	2.13±0.02	17.9	±0.7	19.7	±1.1	1.1	±0.0	19.4	±0.6	44.4	±1.8	41.2	±2.4	29.7	±0.5	44.8	±1.3
48	2.28±0.12	31.3	±7.3	36.6	±9.8	2.3	±0.6	32.4	±7.7	77.5	±18.2	76.7	±20.6	59.4	±16	74.7	±17.7
72	2.50±0.03	52.7	±0.8	59.2	±0.5	3.5	±0.0	58.9	±1.8	130.5	±2.0	123.9	±1.0	92.0	±0.8	135.8	±4.1
B-10		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
1	2.01±0.02	1.0	±0.4	0.6	±0.4	<0.2	--	0.6	±0.4	2.6	±0.9	1.3	±0.9	--	--	1.6	±0.9
3	2.05±0.01	3.0	±0.7	2.8	±0.6	0.3	±0.1	2.4	±0.4	7.5	±1.8	5.8	±1.3	4.9	±1.0	6.2	±1.0
6	2.06±0.01	13.5	±0.3	15.3	±0.2	1.6	±0.0	13.7	±0.0	34.2	±0.8	31.5	±0.3	23.6	±0.3	35.2	±0.0
12	2.10±0.02	14.6	±5.0	16.8	±6.1	1.8	±0.6	14.6	±5.2	37.1	±12.7	34.7	±12.7	25.9	±9.1	37.7	±13.4
24	2.12±0.03	19.1	±5.5	21.6	±5.5	2.3	±0.6	18.8	±4.8	48.3	±13.8	44.4	±11.3	33.5	±8.4	48.4	±12.4
48	2.24±0.07	37.2	±3.2	43.8	±3.5	4.7	±0.4	37.7	±3.2	94.2	±8.2	90.3	±7.1	69.1	±5.7	97.1	±8.2
72	2.38±0.03	43.3	±1.5	51.2	±1.8	5.5	±0.2	44.1	±2.7	109.6	±3.7	105.4	±3.7	81.5	±3.1	113.5	±6.9
B-15		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
1	1.98±0.02	1.4	±0.2	1.1	±0.0	0.4	±0.0	0.8	±0.0	3.6	±0.4	2.2	±0.0	3.6	±0.3	2.3	±0.1
3	2.06±0.00	5.7	±0.1	6.2	±0.2	1.1	±0.0	4.7	±0.1	14.8	±0.4	12.6	±0.3	11.0	±0.3	14.0	±0.4
6	2.06±0.01	12.6	±0.4	14.3	±0.2	2.4	±0.0	10.8	±0.2	32.5	±1.1	29.1	±0.3	23.2	±0.0	32.3	±0.7
12	2.12±0.01	16.7	±0.6	19.1	±0.7	3.3	±0.1	14.7	±0.5	43.3	±1.5	38.8	±1.4	31.4	±0.8	43.9	±1.6
24	2.14±0.01	24.2	±1.7	27.7	±2.1	4.7	±0.3	21.4	±1.8	62.6	±4.3	56.4	±4.3	45.2	±2.9	63.9	±5.5
48	2.30±0.10	37.8	±0.2	43.9	±0.1	7.4	±0.0	33.6	±0.0	97.7	±0.5	89.2	±0.3	71.5	±0.3	100.3	±0.1
72	2.42±0.06	43.8	±2.3	50.9	±2.5	8.7	±0.4	38.8	±2.4	113.3	±6.1	103.5	±5.2	84.4	±3.7	115.9	±7.2

B-20		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.25	2.03±0.01	<0.5	--	<0.2	--	<0.2	--	<0.2	--	--	--	--	--	--	--	--	--
0.5	2.01±0.02	1.8	±0.6	1.2	±0.7	0.3	±0.1	0.5	±0.5	4.6	±1.5	2.5	±1.4	1.8	±0.9	1.7	±1.6
1	2.00±0.01	2.4	±0.3	1.7	±0.4	0.4	±0.1	0.9	±0.4	6.0	±0.8	3.5	±0.7	2.5	±0.6	3.1	±1.2
3	2.03±0.02	9.0	±0.8	9.4	±0.8	2.0	±0.1	5.4	±0.5	22.9	±2.0	19.6	±1.6	14.2	±1.1	18.9	±1.9
6	2.05±0.02	16.2	±1.1	18.1	±1.4	3.9	±0.3	10.8	±1.1	41.4	±2.8	37.6	±2.9	27.7	±2.2	38.2	±3.8
12	2.11±0.01	20.1	±2.0	22.6	±2.2	5.0	±0.4	13.3	±1.6	51.3	±5.1	47.0	±4.6	35.4	±3.1	46.7	±5.5
24	2.19±0.1	25.9	±6.7	29.5	±8.1	6.6	±1.8	17.9	±5.2	66.0	±17.1	61.5	±16.9	46.8	±13	63.1	±18.5
B-25		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.25	2.03±0.01	0.6	±0.2	<0.2	--	<0.2	--	<0.2	--	1.5	±0.5	--	--	--	--	--	--
0.5	2.02±0.01	1.7	±0.3	1.0	±0.3	0.4	±0.1	<0.2	--	4.3	±0.7	2.0	±0.7	2.3	±0.5	--	--
1	2.01±0.01	4.2	±0.0	3.7	±0.0	1.1	±0.0	1.5	±0.1	10.9	±0.1	7.7	±0.0	6.4	±0.2	6.3	±0.2
3	2.11±0.02	10.9	±1.4	11.4	±1.6	3.3	±0.5	5.4	±0.9	27.8	±3.7	23.9	±3.4	18.4	±2.6	22.9	±3.7
6	2.09±0.02	20.8	±4.2	22.3	±4.7	6.5	±1.4	10.6	±2.1	53.2	±10.8	46.8	±9.9	36.4	±7.7	45.4	±8.9
12	2.14±0.01	24.2	±3.2	26.5	±4.0	7.8	±1.2	13.0	±1.9	61.9	±8.1	55.7	±8.5	43.8	±6.8	55.6	±8.1
24	2.26±0.08	39.0	±2.9	43.3	±2.8	12.9	±0.7	21.2	±1.6	99.9	±7.4	91.0	±6	72.3	±4.2	90.4	±6.9
B-30		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.25	2.05±0.02	0.5	±0.4	<0.2	--	<0.2	--	<0.2	--	1.2	±0.9	--	--	--	--	--	--
0.5	2.01±0.01	1.2	±0.4	0.5	±0.5	0.4	±0.2	<0.2	--	3.1	±1.2	1.1	±1.1	1.7	±0.8	--	--
1	2.00±0.01	3.0	±0.1	2.5	±0.1	1.0	±0.0	0.7	±0.0	7.7	±0.2	5.2	±0.1	4.8	±0.1	3.4	±0.1
3	2.10±0.03	9.7	±0.5	10.4	±0.5	3.7	±0.1	4.1	±0.3	25.2	±1.2	21.9	±1.2	17.7	±0.6	21.3	±1.3
6	2.10±0.02	18.7	±0.5	20.6	±0.6	7.3	±0.2	9.0	±0.1	48.5	±1.2	43.5	±1.3	35.1	±1.2	46.0	±0.4
12	2.11±0.03	16.9	±4.6	19.6	±5.6	6.8	±1.9	7.8	±2.2	44.0	±12.0	41.4	±11.8	32.5	±9.3	40.2	±11.6
24	2.30±0.04	46.1	±2.0	53.2	±2.5	19.4	±0.6	23.5	±1.4	119.8	±5.2	112.4	±5.3	92.9	±2.9	120.9	±7.2
B-35		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.25	2.05±0.01	0.8	±0.2	<0.2	--	0.5	±0.2	<0.2	--	2.0	±0.6	--	--	2.2	±1.0	--	--
0.5	2.01±0.02	3.0	±0.4	2.6	±0.4	1.4	±0.1	0.7	±0.8	7.8	±1.0	5.5	±0.9	5.9	±0.5	4.8	±5.5
1	2.00±0.00	4.6	±1.1	4.2	±1.4	2.1	±0.6	0.8	±0.5	12.0	±2.9	9.0	±3.1	8.5	±2.3	5.5	±3.1
3	2.11±0.02	12.9	±0.2	13.9	±0.2	6.1	±0.1	4.1	±0.1	33.8	±0.5	29.9	±0.5	24.8	±0.6	27.5	±0.5
6	2.11±0.01	22.3	±0.4	24.1	±0.7	10.6	±0.1	7.5	±0.5	58.2	±1.0	51.9	±1.6	43.1	±0.6	50.7	±3.5
12	2.14±0.03	27.3	±3.7	30.3	±4.5	13.4	±1.9	9.4	±1.8	71.4	±9.7	65.2	±9.7	54.6	±7.8	63.6	±12.0
24	2.28±0.05	45.9	±3.3	52.1	±4.5	23.0	±1.8	16.4	±1.4	119.9	±8.7	111.9	±9.6	94.0	±7.3	111.2	±9.8

B-40		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.08	2.03±0.01	<0.5	--	<0.2	--	0.5	±0.1	<0.2	--	--	--	--	--	1.8	±0.5	--	--
0.25	2.03±0.01	1.2	±0.0	0.5	±0.1	0.8	±0.0	<0.2	--	3.1	±0.0	1.2	±0.2	3.0	±0.0	--	--
0.5	2.06±0.01	3.2	±0.4	2.7	±0.3	1.7	±0.1	<0.2	--	8.4	±1.1	5.9	±0.6	6.2	±0.3	--	--
1	2.04±0.01	6.3	±0.7	6.3	±0.7	3.5	±0.3	0.6	±0.1	16.6	±1.9	13.6	±1.5	12.4	±1.2	6.0	±1.4
3	2.13±0.01	14.2	±2.3	15.0	±2.7	7.8	±1.4	2.5	±0.6	37.2	±6.0	32.7	±5.8	27.9	±4.9	25.2	±6.4
6	2.16±0.02	22.2	±0.1	23.1	±0.1	12.2	±0.1	4.4	±0.0	57.9	±0.2	50.3	±0.2	43.7	±0.3	43.6	±0.0
12	2.17±0.04	27.0	±1.4	28.7	±2.0	14.9	±0.9	5.6	±0.4	70.5	±3.7	62.4	±4.3	53.2	±3.3	56.1	±3.9
B-45		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.08	2.02±0.01	<0.5	--	<0.2	--	0.4	±0.1	<0.2	--	--	--	--	--	1.3	±0.2	--	--
0.25	2.04±0.00	1.0	±0.4	0.3	±0.4	1.1	±0.6	<0.2	--	2.6	±1.1	0.6	±0.9	3.4	±1.9	--	--
0.5	2.06±0.00	3.9	±0.5	3.4	±0.5	2.5	±0.3	<0.2	--	10.3	±1.2	7.5	±1.1	7.8	±0.8	--	--
1	2.07±0.02	7.7	±1.1	7.6	±1.2	4.8	±0.6	<0.2	--	20.3	±2.8	16.7	±2.6	15.1	±1.8	--	--
3	2.13±0.01	18.3	±1.0	18.0	±1.1	11.3	±0.6	1.0	±0.1	48.5	±2.6	39.8	±2.3	35.4	±1.8	21.3	±2.0
6	2.16±0.03	23.6	±4.4	21.9	±4.7	15.5	±2.8	1.4	±0.6	62.6	±11.7	48.4	±10.5	48.4	±8.8	29.4	±11.6
12	2.21±0.07	36.4	±5.4	33.1	±5.4	23.3	±2.9	2.7	±0.5	96.5	±14.3	73.1	±12.0	72.8	±9.0	56.5	±10.7
B-50		Concentration, ppm								Normalized Loss, g/m ²							
Time (h)	pH	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error	Na	Na-error	Al	Al-error	B	B-error	Si	Si-error
0.08	2.01±0.01	0.8	±0.2	<0.2	--	0.9	±0.0	--	--	2.0	±0.5	--	--	2.7	±0.0	--	--
0.25	2.04±0.00	1.2	±0.2	0.3	±0.1	1.1	±0.1	--	--	3.2	±0.4	0.6	±0.3	3.2	±0.3	--	--
0.5	2.05±0.01	3.8	±0.2	3.2	±0.2	2.8	±0.1	--	--	9.9	±0.4	7.0	±0.4	8.0	±0.3	--	--
1	2.07±0.01	7.3	±1.4	6.1	±1.6	5.2	±0.9	--	--	19.2	±3.8	13.4	±3.6	14.8	±2.5	--	--
3	2.13±0.01	20.7	±0.1	18.5	±0.1	14.3	±0.1	--	--	54.4	±0.2	40.7	±0.3	40.7	±0.2	--	--
6	2.17±0.03	26.6	±4.7	22.2	±4.3	18.6	±3.6	--	--	69.8	±12.2	49.0	±9.6	53.1	±10.1	--	--
12	2.25±0.03	36.7	±2.2	30.9	±1.3	25.8	±1.8	--	--	96.4	±5.8	68.1	±2.8	73.5	±5.0	--	--