

Appendix A. Concentration-mortality data for inorganic chemicals tested individually with larval Rio Grande silvery minnow and fathead minnow.

Chemical	Test concentration (mg/L)		Rio Grande silvery minnow mortality (%) at				Fathead minnow mortality (%) at			
	Nominal	Measured <sup>a</sup>	24 h	48 h	72 h	96 h	24 h	48 h	72 h	96 h
Aluminum	60	59.1 (1.10) <sup>b</sup>	0	10	20	20	10	20	20	30
	36	34.6 (1.10)	0	0	0	0	0	0	0	0
	21.6	22.4 (1.30)	10	20	20	20	0	0	10	10
	13	13.1 (1.06)	0	0	0	0	0	0	10	20
	7.8	7.61 (1.10)	0	0	0	0	0	0	0	0
	4.7	nm <sup>c</sup>	0	0	0	0	0	0	10	20
	2.8	nm	0	0	0	0	0	0	10	10
	1.7	nm	0	0	0	10	0	0	0	10
	1	nm	0	0	0	0	0	0	0	0
Control	0.254 (0.121)	0	0	0	0	0	0	0	0	0
Ammonia:	170	168 (4.28) <sup>d</sup> [4.28] <sup>e</sup>	100	100	100	100	100	100	100	100
Total	100	96.7 (3.12) [3.15]	100	100	100	100	100	100	100	100
(as nitrogen)	60	58.2 (2.33) [2.35]	90	100	100	100	100	100	100	100
	36	35.2 (1.75) [1.76]	90	100	100	100	90	100	100	100
	21.6	20.9 (1.28) [1.27]	0	40	60	80	40	40	70	80
	13	13.0 (0.952) [0.950]	0	0	10	10	10	10	20	30
	7.8	7.38 (0.636) [0.648]	0	0	10	10	0	0	0	20
	4.7	4.44 (0.439) [0.428]	0	0	0	0	0	0	0	10
	2.8	2.70 (0.289) [0.289]	0	0	0	0	0	0	0	0
Control	<0.10	0	0	0	0	0	0	0	0	0

Appendix A. Continued.

Chemical	Test concentration (mg/L)		Rio Grande silvery minnow mortality (%) at				Fathead minnow mortality (%) at			
	Nominal	Measured <sup>a</sup>	24 h	48 h	72 h	96 h	24 h	48 h	72 h	96 h
Arsenic	100	87.5	90	90	100	100	100	100	100	100
	60	55.3	70	70	70	90	100	100	100	100
	36	31.8	40	50	50	50	100	100	100	100
	21.6	19.6	0	0	0	0	30	40	40	40
	13	12.0	0	0	0	0	10	10	10	20
	7.8	7.12	0	0	0	0	0	0	10	10
	4.7	4.15	0	0	0	0	0	0	0	10
	2.8	2.83	0	10	10	10	0	0	10	10
	Control	<0.0056	0	0	0	0	0	0	0	0
Chlorine (as total residual chlorine)	1.70	1.60	100	100	100	100	100	100	100	100
	1.00	0.90	100	100	100	100	100	100	100	100
	0.600	0.54	100	100	100	100	100	100	100	100
	0.360	0.31	100	100	100	100	100	100	100	100
	0.216	0.165	90	90	90	90	100	100	100	100
	0.130	0.079	0	0	10	10	0	0	0	0
	0.078	0.038	0	0	0	0	0	0	0	0
	0.047	0.018	0	0	0	0	0	0	0	10
	0.028	0.009	0	0	0	10	0	0	0	0
	Control	<0.001	0	0	0	10	0	0	0	0

Appendix A. Continued.

Chemical	Test concentration (mg/L)		Rio Grande silvery minnow mortality (%) at				Fathead minnow mortality (%) at			
	Nominal	Measured <sup>a</sup>	24 h	48 h	72 h	96 h	24 h	48 h	72 h	96 h
Copper	1.7	1.65	100	100	100	100	90	90	90	90
	1.000	0.989	100	100	100	100	30	60	70	90
	0.600	0.557	100	100	100	100	40	80	90	90
	0.360	0.351	30	90	90	90	0	0	10	20
	0.216	0.216	0	20	30	30	0	10	10	20
	0.130	0.130	0	0	0	0	10	10	10	10
	0.078	0.081	0	0	0	0	0	0	0	0
	0.047	0.050	0	0	0	0	0	0	0	0
	Control	<0.0056	0	0	0	0	0	0	0	0
Nitrate (as nitrogen)	4700	4474	100	100	100	100	100	100	100	100
	2800	2680	100	100	100	100	100	100	100	100
	1700	1656	30	40	50	70	50	80	80	90
	1000	979	0	0	0	0	10	10	10	10
	600	590	0	0	0	0	0	0	0	0
	360	357	0	0	0	0	0	0	10	10
	216	218	0	0	0	0	0	0	0	0
	Control	<1.0	0	0	0	0	0	0	0	0

<sup>a</sup>Measured concentrations in unfiltered water collected at test initiation.

<sup>b</sup>Measured concentrations in filtered water collected at test initiation.

Appendix A. Continued.

<sup>c</sup>nm = not measured.

<sup>d</sup>Initial concentrations of un-ionized ammonia (mg/L as N) in tests solutions for Rio Grande silvery minnow.

<sup>e</sup>Initial concentrations of un-ionized ammonia (mg/L as N) in tests solutions for fathead minnow.