

Supplemental Table S1 for: Erickson, Mount, Highland, Hockett, Hoff, Jenson, Norberg-King, and Peterson. “The acute toxicity of major ion salts to Ceriodaphnia dubia. III. Mathematical models for mixture toxicity”. This table provides the data used in developing the general ion toxicity submodel (Figure 3 for activity-based model and Figure 6 for concentration-based model). Data are from Mount et al. [1] and Erickson et al. [2].

Test #	Chemical	CultWater	DilWater	Ca+2 Act	Osmolarity	Ca Conc	Nom Osm
				mM	mOsm/L	mM	mOsm/L
TDS-12-11C	CaCl2	MHRW	ALSW	7.517	46.86	17.512	53.52
TDS-12-11D	CaCl2	MHRW	MHRW	7.567	50.34	18.298	57.93
TDS-12-12C	Na2SO4	MHRW	ALSW	0.082	63.38	0.364	74.17
TDS-12-12D	Na2SO4	MHRW	MHRW	0.079	62.17	0.348	72.83
TDS-12-13C	NaHCO3	MHRW	ALSW	0.041	41.70	0.187	49.04
TDS-12-13D	NaHCO3	MHRW	MHRW	0.036	36.57	0.141	42.15
TDS-12-15A	NaCl	MHRW	ALSW	0.174	63.55	0.364	67.42
TDS-12-15B	NaCl	MHRW	MHRW	0.156	68.13	0.348	72.66
TDS-12-17A	NaCl	MHRW	Low Ca:Mg	0.037	52.96	0.075	55.98
TDS-12-17B	NaCl	MHRW	HighCa:Mg	0.226	63.78	0.475	67.65
TDS-12-17C	NaHCO3	MHRW	Low Ca:Mg	0.020	33.79	0.075	38.67
TDS-12-17D	NaHCO3	MHRW	HighCa:Mg	0.045	41.19	0.200	49.39
TDS-12-17E	Na2SO4	MHRW	Low Ca:Mg	0.024	28.64	0.075	32.30
TDS-12-17F	Na2SO4	MHRW	HighCa:Mg	0.111	58.66	0.475	68.42
TDS-12-19A	Na2SO4	MHRW	Low Cl:SO4	0.082	63.49	0.365	74.35
TDS-12-19B	Na2SO4	MHRW	HighCl:SO4	0.087	56.19	0.365	65.37
TDS-12-20A	NaHCO3	MHRW	Low Cl:SO4	0.041	41.85	0.190	49.27
TDS-12-20B	NaHCO3	MHRW	HighCl:SO4	0.035	42.24	0.166	50.73
TDS-12-20C	NaCl	MHRW	Low Cl:SO4	0.179	55.54	0.365	58.78
TDS-12-20D	NaCl	MHRW	HighCl:SO4	0.180	56.99	0.365	60.30
TDS-12-21A	NaHCO3	MHRW	0.33x ALSW	0.028	40.29	0.121	47.14
TDS-12-21B	NaHCO3	MHRW	3.0x ALSW	0.052	39.14	0.231	46.17
TDS-12-21C	NaCl	MHRW	0.33x ALSW	0.062	53.85	0.121	56.82
TDS-12-21D	NaCl	MHRW	3.0x ALSW	0.486	69.10	1.093	73.87
TDS-12-21E	Na2SO4	MHRW	0.33x ALSW	0.035	36.47	0.121	41.56
TDS-12-21F	Na2SO4	MHRW	3.0x ALSW	0.245	65.43	1.093	76.94
TDS-12-23A	NaCl	MHRW	0.33x MHRW	0.056	61.35	0.116	64.98
TDS-12-23B	NaCl	MHRW	MHRW	0.155	70.05	0.348	74.72
TDS-12-23C	Na2SO4	MHRW	0.33x MHRW	0.034	35.74	0.116	40.73
TDS-12-23D	Na2SO4	MHRW	MHRW	0.081	58.71	0.348	68.60
TDS-13-01A	NaCl	ALSW	ALSW	0.180	56.14	0.364	59.41
TDS-13-01B	NaCl	ALSW	0.33x ALSW	0.062	51.30	0.121	54.08
TDS-13-01E	NaCl	MHRW	MHRW	0.160	62.01	0.348	66.02
TDS-13-02B	NaCl	MHRW	0.33x MHRW	0.059	49.33	0.116	52.04
TDS-13-03C	NaCl	MHRW	Low Alk ALSW	0.167	62.85	0.364	66.86
TDS-13-03D	NaCl	MHRW	High Alk ALSW	0.169	67.27	0.364	71.49
TDS-13-04C	NaCl	MHRW	0.125x MHRW	0.025	33.38	0.044	34.90
TDS-13-04D	NaCl	MHRW	MHRW	0.162	58.90	0.348	62.67
TDS-13-05A	Na2SO4	MHRW	Low Alk ALSW	0.086	56.26	0.364	65.63
TDS-13-05B	Na2SO4	MHRW	High Alk ALSW	0.088	54.91	0.364	63.70
TDS-13-06D	Na2SO4	MHRW	0.125x MHRW	0.017	17.99	0.044	19.86
TDS-13-07D	NaHCO3	MHRW	0.125x MHRW	0.016	21.83	0.044	24.32
TDS-13-07F	CaCl2	MHRW	0.125x MHRW	6.796	40.13	15.028	45.46
TDS-13-25A	NaCl	ALSW	Low K ALSW	0.173	63.92	0.364	67.81
TDS-13-25B	NaCl	ALSW	High K ALSW	0.172	65.98	0.364	70.03
TDS-13-25C	Na2SO4	ALSW	Low K ALSW	0.088	54.94	0.364	63.88
TDS-13-25D	Na2SO4	ALSW	High K ALSW	0.082	63.45	0.364	74.25
TDS-13-25E	NaHCO3	ALSW	Low K ALSW	0.029	43.75	0.139	51.56
TDS-13-25F	NaHCO3	ALSW	High K ALSW	0.039	46.21	0.192	54.68
TDS-13-26A	CaCl2	ALSW	Low K ALSW	7.432	46.17	17.232	52.70
TDS-13-26B	CaCl2	ALSW	High K ALSW	6.986	42.52	15.791	48.38
TDS-13-27A	CaCl2	ALSW	0.3x ALSW	6.631	38.73	14.493	43.81
TDS-13-27B	CaCl2	ALSW	3.0x ALSW	7.823	52.38	19.115	60.31
TDS-13-30A	NaCl	ALSW	0.33x ALSW	0.061	55.72	0.121	58.84
TDS-13-30B	NaCl	ALSW	ALSW	0.174	63.49	0.364	67.35
TDS-13-30C	NaCl	ALSW	3.0x ALSW	0.461	83.14	1.093	89.17
TDS-13-30D	Na2SO4	ALSW	0.33x ALSW	0.035	35.65	0.121	40.59
TDS-13-30E	Na2SO4	ALSW	ALSW	0.082	63.77	0.364	74.65
TDS-13-30F	Na2SO4	ALSW	3.0x ALSW	0.239	68.45	1.093	80.64
TDS-14-16A	NaHCO3	ALSW	ALSW Aged	0.032	35.45	0.134	41.25
TDS-14-16B	NaHCO3	ALSW	3.0x ALSW Aged	0.029	38.22	0.126	44.94
TDS-14-16C	NaHCO3	ALSW	ALSW Fresh	0.051	47.16	0.207	53.11
TDS-14-16D	NaHCO3	ALSW	3.0x ALSW Fresh	0.033	51.71	0.139	58.69
TDS-14-24A	O1NaCl	ALSW	ALSW	0.173	64.97	0.364	68.92
TDS-14-35A	NaCl	ALSW	ALSW	0.170	68.87	0.364	73.16
TDS-14-35B	NaCl	ALSW	Low pH ALSW	0.168	71.86	0.364	76.14
TDS-14-35C	NaCl	ALSW	High pH ALSW	0.174	62.69	0.364	66.49
Test #	ChemicalA	ChemicalB	Mixture Specs	Ca+2 Act	Osmolarity	Ca Conc	Nom Osmo
TDS-13-33	NaCl	Na2SO4	BaselineNaCl	0.172	65.41	0.364	69.42
TDS-13-33	NaCl	Na2SO4	5:1NaCl:Na2SO4	0.136	71.75	0.364	77.58
TDS-13-33	NaCl	Na2SO4	2:1NaCl:Na2SO4	0.119	67.85	0.364	74.48

TDS-13-33	NaCl	Na2SO4	1:1NaCl:Na2SO4	0.105	67.16	0.364	74.94
TDS-13-33	NaCl	Na2SO4	1:2NaCl:Na2SO4	0.094	67.52	0.364	76.64
TDS-13-33	NaCl	Na2SO4	1:5NaCl:Na2SO4	0.087	66.05	0.364	76.17
TDS-13-33	NaCl	Na2SO4	BaselineNa2SO4	0.081	64.60	0.364	75.67
TDS-14-02	NaHCO3	NaCl	BaselineNaHCO3	0.034	44.12	0.164	52.60
TDS-14-02	NaHCO3	NaCl	5:1NaHCO3:NaCl	0.035	52.60	0.152	61.07
TDS-14-02	NaHCO3	NaCl	2:1NaHCO3:NaCl	0.058	57.00	0.220	64.54
TDS-14-02	NaHCO3	NaCl	1:1NaHCO3:NaCl	0.082	59.21	0.253	65.11
TDS-14-02	NaHCO3	NaCl	1:2NaHCO3:NaCl	0.138	63.82	0.364	69.02
TDS-14-02	NaHCO3	NaCl	1:5NaHCO3:NaCl	0.156	67.43	0.364	72.10
TDS-14-02	NaHCO3	NaCl	BaselineNaCl	0.176	60.42	0.364	64.02
TDS-14-07	Na2SO4	NaHCO3	BaselineNa2SO4	0.085	57.70	0.364	67.24
TDS-14-07	Na2SO4	NaHCO3	5:1Na2SO4:NaHCO3	0.089	54.32	0.364	62.81
TDS-14-07	Na2SO4	NaHCO3	2:1Na2SO4:NaHCO3	0.082	62.62	0.364	73.05
TDS-14-07	Na2SO4	NaHCO3	1:1Na2SO4:NaHCO3	0.084	55.67	0.364	64.82
TDS-14-07	Na2SO4	NaHCO3	1:2Na2SO4:NaHCO3	0.097	40.45	0.364	46.50
TDS-14-07	Na2SO4	NaHCO3	1:5Na2SO4:NaHCO3	0.073	53.53	0.364	63.91
TDS-14-07	Na2SO4	NaHCO3	BaselineNaHCO3	0.034	47.63	0.174	57.11
TDS-14-08	NaCl	Na2SO4	BaselineNaCl	1.084	81.59	2.494	87.51
TDS-14-08	NaCl	Na2SO4	5:1NaCl:Na2SO4	0.869	92.40	2.494	100.98
TDS-14-08	NaCl	Na2SO4	2:1NaCl:Na2SO4	0.776	84.27	2.494	93.44
TDS-14-08	NaCl	Na2SO4	1:1NaCl:Na2SO4	0.686	83.46	2.494	94.08
TDS-14-08	NaCl	Na2SO4	1:2NaCl:Na2SO4	0.599	88.14	2.494	101.20
TDS-14-08	NaCl	Na2SO4	1:5NaCl:Na2SO4	0.566	81.27	2.494	94.65
TDS-14-08	NaCl	Na2SO4	BaselineNa2SO4	0.510	84.23	2.494	99.94
TDS-14-06	CaCl2	CaSO4	2000AppmCaSO4	7.697	46.75	24.954	61.16
TDS-14-06	CaCl2	CaSO4	2000BppmCaSO4	7.809	47.76	25.364	62.39
TDS-14-06	CaCl2	CaSO4	1600ppmCaSO4	7.670	46.91	23.524	59.81
TDS-14-06	CaCl2	CaSO4	1200ppmCaSO4	7.772	48.18	22.534	59.78
TDS-14-06	CaCl2	CaSO4	800ppmCaSO4	7.731	48.15	21.024	58.18
TDS-14-06	CaCl2	CaSO4	400ppmCaSO4	7.333	45.05	18.294	52.93
TDS-14-06	CaCl2	CaSO4	0ppmCaSO4	7.406	45.94	17.144	52.42
TDS-13-35	NaCl	MgCl2	BaselineNaCl	0.177	59.42	0.364	62.94
TDS-13-35	NaCl	MgCl2	5:1NaCl:MgCl2	0.160	78.32	0.364	83.98
TDS-13-37	Na2SO4	MgSO4	BaselineNa2SO4	0.083	61.73	0.364	72.16
TDS-13-37	Na2SO4	MgSO4	5:1Na2SO4:MgSO4	0.079	65.97	0.364	79.00
TDS-14-04	NaHCO3	MgCO3	BaselineNaHCO3	0.038	42.64	0.177	50.74
TDS-14-04	NaHCO3	MgCO3	5:1NaHCO3:MgCO3	0.047	41.64	0.218	51.18
TDS-14-11	NaCl	MgSO4	BaselineNaCl	0.175	61.60	0.364	65.30
TDS-14-11	NaCl	MgSO4	10:1NaCl:MgSO4	0.147	78.88	0.364	85.16
TDS-14-11	NaCl	MgSO4	5:1NaCl:MgSO4	0.140	73.85	0.364	80.62
TDS-14-12	NaCl	MgCO3	BaselineNaCl	0.171	66.30	0.364	70.38
TDS-14-12	NaCl	MgCO3	10:1NaCl:MgCO3	0.165	68.59	0.369	73.31
TDS-14-12	NaCl	MgCO3	5:1NaCl:MgCO3	0.154	74.25	0.374	80.18
TDS-14-05	NaCl	MgCl2	BaselineNaCl	1.103	76.68	2.494	82.17
TDS-14-05	NaCl	MgCl2	5:1NaCl:MgCl2	1.079	78.86	2.494	84.98
TDS-14-13	Na2SO4	MgSO4	BaselineNa2SO4	0.521	81.05	2.494	96.01
TDS-14-13	Na2SO4	MgSO4	10:1Na2SO4:MgSO4	0.520	80.08	2.494	96.24
TDS-14-13	Na2SO4	MgSO4	5:1Na2SO4:MgSO4MOD	0.470	96.31	2.494	118.19
TDS-14-21	Na2SO4	MgSO4	BaselineNa2SO4	0.084	59.23	0.364	69.10
TDS-14-21	Na2SO4	MgSO4	5:1Na2SO4:MgSO4	0.075	73.73	0.364	88.91
TDS-13-34	NaCl	CaCl2	BaselineNaCl	0.175	61.18	0.364	64.84
TDS-13-34	NaCl	CaCl2	5:1NaCl:CaCl2	2.052	95.87	5.044	103.76
TDS-13-34	NaCl	CaCl2	2:1NaCl:CaCl2	4.120	100.64	10.664	110.46
TDS-13-34	NaCl	CaCl2	1:1NaCl:CaCl2	5.693	88.97	14.674	98.75
TDS-13-34	NaCl	CaCl2	1:2NaCl:CaCl2	6.669	72.89	16.694	81.69
TDS-13-34	NaCl	CaCl2	1:5NaCl:CaCl2	7.655	63.37	18.964	71.88
TDS-13-34	NaCl	CaCl2	BaselineCaCl2	8.227	52.93	19.914	60.73
TDS-14-01	Na2SO4	CaCl2	BaselineNa2SO4	0.088	54.04	0.364	62.80
TDS-14-01	Na2SO4	CaCl2	5:1Na2SO4:CaCl2	0.969	84.41	4.544	100.27
TDS-14-01	Na2SO4	CaCl2	2:1Na2SO4:CaCl2	2.348	98.32	10.664	117.64
TDS-14-01	Na2SO4	CaCl2	1:1Na2SO4:CaCl2	3.924	91.06	15.374	108.67
TDS-14-01	Na2SO4	CaCl2	1:2Na2SO4:CaCl2	5.482	76.58	17.894	90.58
TDS-14-01	Na2SO4	CaCl2	1:5Na2SO4:CaCl2	6.865	62.51	18.904	72.94
TDS-14-01	Na2SO4	CaCl2	BaselineCaCl2	7.608	47.62	17.814	54.43
TDS-14-09	NaCl	CaSO4	2000ppmCaSO4	4.248	93.99	15.054	109.74
TDS-14-09	NaCl	CaSO4	1500ppmCaSO4	3.406	100.05	11.384	113.98
TDS-14-09	NaCl	CaSO4	1000ppmCaSO4	2.496	100.60	7.704	112.20
TDS-14-09	NaCl	CaSO4	500ppmCaSO4	1.464	95.98	4.034	104.84
TDS-14-09	NaCl	CaSO4	200ppmCaSO4	0.758	79.65	1.834	85.68
TDS-14-09	NaCl	CaSO4	100ppmCaSO4	0.483	71.34	1.094	76.24
TDS-14-09	NaCl	CaSO4	0ppmCaSO4	0.173	64.57	0.364	68.52
TDS-13-36	MgCl2	CaCl2	BaselineCaCl2	7.233	44.51	16.584	50.74
TDS-14-10	MgSO4	CaCl2	BaselineCaCl2	8.204	52.73	19.844	60.52
TDS-14-03	NaCl	KCl	BaselineNaCl	0.167	71.87	0.364	76.42
TDS-14-17	KCl	CaCl2	1:5KCl:CaCl2	7.907	52.38	18.964	59.88
TDS-14-17	KCl	CaCl2	BaselineCaCl2	7.866	49.81	18.674	57.01
TDS-14-26	NaCl	Mannitol	BaselineNaCl	0.174	62.74	0.364	66.52
TDS-14-29	CaCl2	Mannitol	BaselineCaCl2	7.675	48.19	18.034	55.09