

1763231	Danio rerio	Zebra Danio	0.2500635	Al mg/L	Cheng et al.
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1763231	Danio rerio	Zebra Danio	0.2500635	Al mg/L	Cheng et al.
1763231	Danio rerio	Zebra Danio	0.05	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.25	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.05	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.25	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.25	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.25	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.25	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.05	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.005	Al mg/L	Wang, M. et al.
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1763231	Danio rerio	Zebra Danio	0.25	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.05	Al mg/L	Wang, M. et al.
1763231	Danio rerio	Zebra Danio	0.05	Al mg/L	Wang, M. et al.
2795393	Danio rerio	Zebra Danio	0.000734	Al mg/L	Keiter et al
2795393	Danio rerio	Zebra Danio	0.000734	Al mg/L	Keiter et al
2795393	Danio rerio	Zebra Danio	0.1069	Al mg/L	Keiter et al
2795393	Danio rerio	Zebra Danio	0.2676	Al mg/L	Keiter et al
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2795393	Danio rerio	Zebra Danio	0.2676	Al mg/L	Keiter et al
2795393	Danio rerio	Zebra Danio	0.1069	Al mg/L	Keiter et al

ACR:

Author	Acute geomean	Chronic geomean	ACR
All	37.5	0.15	250
Geomean ACR:			250

2) Invertebrates – Water fleas and Lamp mussel
 ACRs can be calculated for four laboratories: i) Ji, ii) Li, iii) Boudreau, and iv) Hazelton

Acute data:

CAS Number	Species Scientific Name	Species Common Name	Conc 1 (Standardized)	Conc 1 Units (Standardized)	Author	Geo mean
1763231	Daphnia magna	Water Flea	37.36	Al mg/L	Ji et al.	37.36
2795393	Daphnia magna	Water Flea	63	Al mg/L	Li,M.H.	63
2795393	Daphnia magna	Water Flea	130	Al mg/L	Boudreau et al.	93.5
2795393	Daphnia magna	Water Flea	67.2	Al mg/L	Boudreau et al.	
1763231	Lampsilis siliquoidea	Lamp-Mussel	158.1	Al mg/L	Hazelton et al	76.2
1763231	Lampsilis siliquoidea	Lamp-Mussel	17.7	Al mg/L	Hazelton et al	
1763231	Lampsilis siliquoidea	Lamp-Mussel	158.1	Al mg/L	Hazelton et al	

Chronic data:

CAS Number	Species Scientific Name	Species Common Name	Conc 1 (Standardized)	Conc 1 Units (Standardized)	Author	Geo mean
1763231	Daphnia magna	Water Flea	2.5	Al mg/L	Ji et al.	1.77
1763231	Daphnia magna	Water Flea	2.5	Al mg/L	Ji et al.	
1763231	Daphnia magna	Water Flea	1.25	Al mg/L	Ji et al.	
1763231	Daphnia magna	Water Flea	1.25	Al mg/L	Ji et al.	
2795393	Daphnia magna	Water Flea	9.1	Al mg/L	Li,M.H.	5.3
2795393	Daphnia magna	Water Flea	1	Al mg/L	Li,M.H.	
2795393	Daphnia magna	Water Flea	5	Al mg/L	Li,M.H.	
2795393	Daphnia magna	Water Flea	10	Al mg/L	Li,M.H.	
2795393	Daphnia magna	Water Flea	5	Al mg/L	Li,M.H.	
2795393	Daphnia magna	Water Flea	10	Al mg/L	Li,M.H.	
2795393	Daphnia magna	Water Flea	42.9	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	42.9	Al mg/L	Boudreau et al.	28.6

2795393	Daphnia magna	Water Flea	50	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	50	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	50	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	5.3	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	25	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	25	Al mg/L	Boudreau et al.	
2795393	Daphnia magna	Water Flea	25	Al mg/L	Boudreau et al.	
1763231	Lampsilis siliquoidea	Lamp-Mussel	0.0695	Al mg/L	Hazelton et al	0.0695

ACR:

Author	Organism	Acute geomean	Chronic geomean	ACR
Ji	Water flea	37.36	1.77	21.1
Li	Water flea	63	5.3	11.9
Boudreau	Water flea	93.5	28.6	3.3
Geomean ACR:				9.4

ACR:

Author	Organism	Acute geomean	Chronic geomean	ACR
Hazelton	Lamp Mussel	76.2	0.0695	1096
Geomean ACR:				1096

3) Sensitive freshwater species – none, a default of 18 was used

PFOS marine water ACR calculation:

- 1) Fish species – no fish data are available, a default of 18 was used
- 2) Invertebrates – opossum shrimp
Data are available from one lab: Drottar and Kuregar

Acute data:

CAS Number	Species Scientific Name	Species Common Name	Conc 1 (Standardized)	Conc 1 Units (Standardized)	Author	Geo mean
2795393	Americamysis bahia	Opossum Shrimp	5.4	Al mg/L	Drottar and Kruegar	4.6
2795393	Americamysis bahia	Opossum Shrimp	5.4	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	4.4	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	3.6	Al mg/L	Drottar and Kruegar	

Chronic data:

CAS Number	Species Scientific Name	Species Common Name	Conc 1 (Standardized)	Conc 1 Units (Standardized)	Author	Geo mean
2795393	Americamysis bahia	Opossum Shrimp	0.55	Al mg/L	Drottar and Kruegar	0.39
2795393	Americamysis bahia	Opossum Shrimp	0.55	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.55	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.37	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.37	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.37	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.25	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.25	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.25	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.55	Al mg/L	Drottar and Kruegar	
2795393	Americamysis bahia	Opossum Shrimp	0.55	Al mg/L	Drottar and Kruegar	

ACR:

Author	Acute geomean	Chronic geomean	ACR
Drottar and Kruegar	4.6	0.39	11.8
Geomean ACR:			11.8

3) Sensitive species – no sensitive species data are available, a default of 18 was used

Appendix F – Plant toxicity dataset

PFOA freshwater plant toxicity dataset

CAS Number	Species Scientific Name	Species Common Name	Observed Duration (Days)	Observed Duration Units (Days)	Endpoint	Effect	Effect Measurement	Conc 1	Conc 1 Units
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Population growth rate	6.25	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Population growth rate	11.37	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Biomass	11.37	Al mg/L
335671	Chlorella pyrenoidosa	Green Algae	4	Day(s)	LOEC	Physiology	Permeability, tissue, membrane	15	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	LOEC	Population	Biomass	22.7	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	LOEC	Population	Population growth rate	22.7	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Biomass	100	Al mg/L
335671	Chlorella pyrenoidosa	Green Algae	4	Day(s)	EC50	Population	Abundance	190.99	Al mg/L
335671	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Abundance	207.46	Al mg/L
335671	Chlorella vulgaris	Green Algae	4	Day(s)	IC10	Population	Abundance	5796.9912	Al mg/L
335671	Chlorella vulgaris	Green Algae	4	Day(s)	IC25	Population	Abundance	14078.4072	Al mg/L
335671	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	IC10	Population	Abundance	53829.204	Al mg/L
335671	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	IC25	Population	Abundance	81571.9476	Al mg/L
335671	Chlorella vulgaris	Green Algae	4	Day(s)	IC50	Population	Abundance	115525.753	Al mg/L
335671	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	IC50	Population	Abundance	123393.098	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Population growth rate	>100	Al mg/L
3825261	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Biomass	>100	Al mg/L

335671	Lemna gibba	Inflated Duckweed	21	Day(s)	NOEC	Growth	Number of leaves	24	AI mg/L
335671	Lemna gibba	Inflated Duckweed	28	Day(s)	NOEC	Growth	Number of leaves	24	AI mg/L
335671	Lemna gibba	Inflated Duckweed	35	Day(s)	NOEC	Growth	Number of leaves	24	AI mg/L
335671	Lemna gibba	Inflated Duckweed	21	Day(s)	LOEC	Growth	Number of leaves	74	AI mg/L
335671	Lemna gibba	Inflated Duckweed	28	Day(s)	LOEC	Growth	Number of leaves	74	AI mg/L
335671	Lemna gibba	Inflated Duckweed	35	Day(s)	LOEC	Growth	Number of leaves	74	AI mg/L
335671	Lemna gibba	Inflated Duckweed	35	Day(s)	IC10	Growth	Number of leaves	20289.4692	AI mg/L
335671	Lemna gibba	Inflated Duckweed	35	Day(s)	IC50	Growth	Number of leaves	46375.9296	AI mg/L

PFOS freshwater plant toxicity dataset

CAS Number	Species Scientific Name	Species Common Name	Observed Duration (Days)	Observed Duration Units (Days)	Endpoint	Effect	Effect Measurement	Conc 1	Conc 1 Units
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Abundance	5.3	Al mg/L
2795393	Chlorella vulgaris	Green Algae	4	Day(s)	NOEC	Population	Abundance	8.2	Al mg/L
2795393	Chlorella vulgaris	Green Algae	4	Day(s)	NOEC	Population	Chlorophyll A concentration	9.6	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Chlorophyll A concentration	16.6	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Population growth rate	44	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Abundance	44	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Abundance	44	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	NOEC	Population	Abundance	44	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Abundance	48.2	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC10	Population	Abundance	49	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC10	Population	Abundance	49	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC10	Population	Population growth rate	59	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Chlorophyll A concentration	59.2	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Abundance	71	Al mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Abundance	71	Al mg/L
2795393	Chlorella vulgaris	Green Algae	4	Day(s)	EC50	Population	Abundance	81.6	Al mg/L

2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	LOEC	Population	Population growth rate	86	AI mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	LOEC	Population	Abundance	86	AI mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	LOEC	Population	Abundance	86	AI mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	LOEC	Population	Abundance	86	AI mg/L
2795393	Chlorella vulgaris	Green Algae	4	Day(s)	EC50	Population	Chlorophyll A concentration	88.1	AI mg/L
2795393	Chlorella vulgaris	Green Algae	4	Day(s)	NOEC	Physiology	Permeability, tissue, membrane	120	AI mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC50	Population	Population growth rate	126	AI mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC90	Population	Abundance	145	AI mg/L
2795393	Chlorella vulgaris	Green Algae	4	Day(s)	LOEC	Physiology	Permeability, tissue, membrane	160	AI mg/L
2795393	Pseudokirchneriella subcapitata	Green Algae	4	Day(s)	EC90	Population	Population growth rate	>179	AI mg/L

PFOS marine water plant toxicity

CAS Number	Species Scientific Name	Species Common Name	Observed Duration (Days)	Observed Duration Units (Days)	Endpoint	Effect	Effect Measurement	Conc 1 (Standardized)	Conc 1 Units (Standardized)
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC10	Population	Abundance	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC10	Population	Population growth rate	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC10	Population	Population changes, general	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC50	Population	Abundance	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC50	Population	Population growth rate	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC50	Population	Population changes, general	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC90	Population	Population changes, general	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC90	Population	Abundance	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	EC90	Population	Population growth rate	>3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	NOEC	Population	Abundance	3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	NOEC	Population	Population changes, general	3.2	Al mg/L
2795393	Skeletonema costatum	Diatom	4	Day(s)	NOEC	Population	Population growth rate	3.2	Al mg/L