22-Nov-04

ASTER ECOTOXICITY PROFILE

U.S. Environmental Protection Agency
Office of Research and Development
National Health and Environmental Effects Research Laboratory
Mid-Continent Ecology Division
(formerly the Environmental Research Laboratory-Duluth)

Contact: Scientific Outreach Program
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I. CHEMICAL IDENTIFICATION

Name Fluoranthene

CAS number 206-44-0
SMILES c(ccc1-c2cc3)cc1-c(ccc4)c2c4c3

Formula C16 H10

II. ENVIRONMENTAL EXPOSURE ASSESSMENT

Parameter	Value	Source	Reference
Molecular Weight (g/mole)	202.3	Calc.	
Melting Point (C)	111.	ASTER	
Boiling Point (C)	344.	Calc.	
Vapor Pressure (mm of Hg)	9.47E-07	Calc.	
Ht Vaporization (cal/mole)	1.37E+04	Calc.	
Solubility in Water (mg/L)	0.243	ASTER	1005
Log P	4.95	CLogP	17934
pKa	not available for this chemical		
Adsorption Coef (log Koc)	4.03	Calc.	
Henry's Constant (atm-m**3/mole)	1.04E-06	Calc.	
Log10(Henry's Constant) (atm-m**3/mole)	-5.98	Calc.	
Hydrolysis Half-life (days)	hydrolysis unlikely		
BOD Half-life: HALF-LIFE > 20 DAYS		Calc.	

Mackay Level 1 Environmental Partitioning @25 C Fugacity = 1.022E-07 Pa
0.25 % into air
48.03 % into soil
6.80 % into water
0.07 % into suspended solids
0.03 % into aquatic biota
44.82 % into sediment

III. ECOTOXICOLOGICAL HAZARD ASSESSMENT

Aquatic Hazard Identification

Water Quality Criteria Document for Polynuclear Aromatic Hydrocarbons, 1980 [9273]

Table 1. Other data for polynuclear aromatic hydrocarbons

Species	Chemical	Duration	Effect	Result (ug/l)
FRESHWATER SPECIES				
Alga, Oedogonium cardiacum	Benzo[a] pyrene	3 days	Model ecosystem bioconcentration factor = 5,258	-
Snail, Physa sp.	Benzo[a] pyrene	3 days	Model ecosystem bioconcentration factor = 82,231	-
Cladoceran, Daphnia pulex	Benzo[a] pyrene	3 days	Model ecosystem bioconcentration factor = 134,248	-
Mosquito, Culex pipiens quinquefasclatus	Benzo[a] pyrene	3 days	Model ecosystem bioconcentration factor = 11,536	-
Mosquitofish, Gambusia affinis	Benzo[a] pyrene	3 days	Model ecosystem bioconcentration factor = 930	-
Protozoan, Paramecium caudatum	Anthracene	60 mins	90% lethal photo-dynamic response	0.1
Cladoceran, Daphnia magna	Anthracene	1 hr	Bioconcentration factor = 200	-
Cladoceran, Daphnia pulex	Anthracene	24 hrs	Bioconcentration factor = 760	-
Mayfly, Hexagenia sp.	Anthracene	28 hrs	Bioconcentration factor = 3,500	-
Bluegill, Lepomis macrochirus	Benzo-(a)-Anthracene	6 mos	87% mortality	1,000
SALTWATER SPECIES				
Eastern oyster, Crassostrea virginica	Benzo[a] pyrene	14 days	Bioconcentration factor = 242	-
Clam, Rangia cuneata	Benzo[a] pyrene	24 hrs	Bioconcentration factor = 8.66	-
Clam, Rangia cuneata	Benzo[a] pyrene	24 hrs	Bioconcentration factor = 236	-
Clam,	Chrysene	24 hrs	Bioconcentration	-

Rangia cuneata			factor = 8.2	
Mudsucker, Gillichthys mirabilis	Benzo[a] pyrene	96 hrs (edible tissue)	Bioconcentration factor = 0.048	-
Tidepool sculpin, Oliogocottus maculosus	Benzo[a] pyrene	1 hr (edible tissue)	Bioconcentration factor = 0.13	-
Sand dab, Citharichthys stigmacus	Benzo[a] pyrene	1 hr (edible tissue)	Bioconcentration factor = 0.02	-
Polychaete worm, Neanthes arenaceodentata	Crude oil extract (fluorene)	96 hrs	LC50	1,000
Polychaete worm, Neanthes arenaceodentata	Crude oil fraction (phenanthrene)	96 hrs	LC50	600
Polychaete worm, Neanthes arenaceodentata	Crude oil fraction (1-methyl-phenanthrene)	96 hrs	LC50	300

** Researchers and managers using AQUIRE data for analysis or summary **
** projects should consult with the original scientific paper to ensure **
** an understanding of the content of the data retrieved from AQUIRE. **

ACUTE DATA

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Source	Ref No.
FRESH WATER								
Water flea Ceriodaphnia dubia	S	2.00	LC50	MOR		45.0	AQUIRE	3590
Water flea Daphnia magna	S	2.00	LC50	MOR	calculated	1010	QSAR	9003
Bluegill Lepomis macrochirus	F	4.00	LC50	MOR	calculated	1327	QSAR	9003
Fathead minnow Pimephales promelas	F	4.00	LC50	MOR	calculated	1588	QSAR	15823
Channel catfish Ictalurus punctatus	F	4.00	LC50	MOR	calculated	687	QSAR	9003
Rainbow trout,donaldson tr Oncorhynchus mykiss	F	4.00	LC50	MOR	calculated	591	QSAR	9003

CHRONIC DATA

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Source	Ref No.
FRESH WATER								

Fathead minnow Pimephales promelas	F	32.0	MATC	GRO	61 calculated	QSAR	9003

BIOCONCENTRATION DATA

Species Common Name Species Latin Name	Ex Ty	Duratio (days)	Endpoint Effect	Conc Type	BCF	Source	Ref No.
FRESH WATER							
Fathead minnow Pimephales promelas	F	2.00- 304	BCF	RSD	3240 calculated	QSAR	7

OTHER DATA

Species Common Name Species Latin Name	Ex Ty	Duratio (days)	Endpoint Effect	Conc Type	Conc (ug/L)	Source	Ref No.
FRESH WATER							
Scud Hyalella azteca	S	10.0	EC50	IMM	44.9	AQUIRE	6582
Water flea Ceriodaphnia dubia	R	7.00	IC50	REP	28.5	AQUIRE	3590
Water flea Ceriodaphnia dubia	R	4.00	MATC	REP	51.1	AQUIRE	3590
Water flea Ceriodaphnia dubia	R	7.00	MATC	REP	38.4	AQUIRE	3590
Water flea Daphnia magna	S	10.0	EC50	IMM	102.6	AQUIRE	6582
Midge Chironomus tentans	S	10.0	EC50	IMM	31.9	AQUIRE	6582
Fathead minnow Pimephales promelas	F	6.00	LC50	MOR	6.83	AQUIRE	15050
Fathead minnow Pimephales promelas	F	.003	LOEC	AVO	14.7	AQUIRE	17376
Fathead minnow Pimephales promelas	F	.003	NOEC	AVO	8.6	AQUIRE	17376
Fathead minnow Pimephales promelas	F	6.00	NR	HAT	6.2	AQUIRE	15050
Fathead minnow Pimephales promelas	F	14.0	NR	REP	7.9	AQUIRE	15050

Human Health Hazard Identification

MODEL GENETOX.CAN DOESN'T EXIST YET

IV. ECOLOGICAL RISK CHARACTERIZATION

A. Environmental Exposure Assessment

Henry's Constant = 1.04E-06 atm-m**3/mole
Log10 (Henry's Constant) = -5.98 atm-m**3/mole

Lyman et al. 1982. would conclude that a chemical with these properties will volatilize slowly from open water. See page 15-15.

Hydrolysis is not likely to be an important transformation mechanism for this chemical

B. Ecotoxicological Hazard Assessment

Genetic/Mutagenic Assessment

MODEL GENETOX.CAN DOESN'T EXIST YET

NONPOLAR NARCOSIS The acute mode of toxic action for this class of xenobiotics is generally attributed to narcosis (the toxicologically induced and reversible stages of neural disruption, i.e. general anesthesia). Intoxication via nonpolar narcosis is thought to be the minimal effect that can be elicited by a xenobiotic and the QSAR for nonpolar narcosis provides predictions of baseline acute toxicity [3261]. Chemicals that act via a more specific mode of action, or are metabolically activated, will generally be more toxic than what would be predicted by the nonpolar narcosis QSAR. The acute toxicity modeling component in ASTER assesses the structural characteristics of chemicals and evaluates whether or not an entered compound contains specific functional moieties (or moieties capable of being bioactivated) that are associated with more specific modes of toxic action. The nonpolar narcosis QSAR is invoked only if the structural characteristics of a chemical do not suggest that a more specific mode of action may be involved.

When sufficient data is available from fathead minnow early life stage (ELS) tests (32-d exposures) completed at ERL-Duluth, QSAR models have been developed to predict chronic values for either survival or growth, which ever is the most sensitive endpoint. A chronic value is defined as the geometric mean of the LOEC (lowest observable effect concentration) and the NOEC (no observable effect concentration). These models have been developed for groups of xenobiotics that have been classified based on their acute modes of toxic action. Empirical observations suggest that when a statistically robust ELS QSAR can be established and when 96-h LC50/32-d ELS chronic value ratios are within a factor of 20 it is reasonable to assume that adverse effects are elicited through the same mode of toxic action in both 4-d and 32-d exposures. If during a chronic exposure a different mode of action is involved, or if metabolic activation is significant, the ratios between acute and chronic endpoint values for a group of xenobiotics are generally quite variable and typically exceed two orders of magnitude. In addition, the statistical strength of ELS QSARs in these instances are poor.

C. Other Information

V. CITATION INFORMATION

REFERENCE NUMBER: 7
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In: D.Mackay, et al., (Eds.), Physical Behavior of PCBs in the Great Lakes, Ann Arbor Sci. Publ., Ann Arbor, MI:269-282

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Environ. Health Perspect. 87:199-205

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Oris,J.T., R.W.Winner, and M.V.Moore
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Suedel,B.C., J.H.Rodgers,Jr., and P.A.Clifford
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Russom,C.L.
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Personal Communication
U.S. EPA, Environmental Research Laboratory-Duluth, Duluth, MN 55804

REFERENCE NUMBER: 9273
U.S. Environmental Protection Agency
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Ambient Water Quality Criteria for Polynuclear Aromatic Hydrocarbons
EPA-440/5-80-069, Criteria and Standards Division, Office of Water Regulations and Standards, Washington, D.C

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Diamond,S.A., J.T.Oris, and S.I.Guttman
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Population of Fathead Minnows
Environ. Toxicol. Chem. 14(8):1393-1400

REFERENCE NUMBER: 15823
Veith,G.D., D.J.Call, and L.T.Brooke
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Structure-Toxicity Relationships for the Fathead Minnow,
Pimephales promelas: Narcotic Industrial Chemicals
Can. J. Fish. Aquat. Sci. 40(6):743-748 (Most LC50 Data Publ
As 12448, 12447, 12858, 12859, 3217)

REFERENCE NUMBER: 17376
Farr,A.J., C.C.Chabot, and D.H.Taylor
1995
Behavioral Avoidance of Fluoranthene by Fathead Minnows
(Pimephales promelas)
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REFERENCE NUMBER: 17934
Leo,A. and D.Weininger
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Daylight Software CLogP Version 3.15+ for Unix
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Inc., 3952 Claremont St., Irving, CA 92714

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ASTER ECOTOXICITY PROFILE
Appendix: Additional Filtered Data from AQUIRE

ASTER processes all Ecotoxicological Hazard Assessment information through a filter which removes data from the final Report which may not be of the highest quality. If more than one test value meets the screening requirements for a given species, the median value for that endpoint and species appears in the ASTER Report. This Appendix contains data that met the filter requirements, but were not the median value for that endpoint and species.

I. CHEMICAL IDENTIFICATION

Name Fluoranthene

CAS number 206-44-0
SMILES c(ccc1-c2cc3)cc1-c(ccc4)c2c4c3

Formula C16 H10

II. Additional data from the AQUIRE database

** Researchers and managers using AQUIRE data for analysis or summary **
** projects should consult with the original scientific paper to ensure **
** an understanding of the content of the data retrieved from AQUIRE. **

OTHER DATA

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Ref No.
FRESH WATER							
Water flea / Ceriodaphnia dubia	R	4.00	MATC	REP		35.6	3590
Water flea / Ceriodaphnia dubia	R	7.00	MATC	REP		51.1	3590
Water flea / Ceriodaphnia dubia	R	7.00	MATC	REP		35.6	3590

III. CITATION INFORMATION

REFERENCE NUMBER: 3590
Oris,J.T., R.W.Winner, and M.V.Moore
1991
A Four-Day Survival and Reproduction Toxicity Test for Ceriodaphnia dubia
Environ. Toxicol. Chem. 10(2):217-224

22-Nov-04

ASTER ECOTOXICITY PROFILE
Other Data from AQUIRE

ASTER processes all Ecotoxicological Hazard Assessment information through a filter which removes data from the final Report which may not be of the highest quality. This appendix contains Other Data that did not meet the filter requirements, but is contained in the AQUIRE database.

I. CHEMICAL IDENTIFICATION

Name Fluoranthene

CAS number 206-44-0
SMILES c(ccc1-c2cc3)cc1-c(ccc4)c2c4c3

Formula C16 H10

II. Additional data from the AQUIRE database

** Researchers and managers using AQUIRE data for analysis or summary **
** projects should consult with the original scientific paper to ensure **
** an understanding of the content of the data retrieved from AQUIRE. **

ACUTE DATA

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Ref No.
FRESH WATER							
Scud / Hyalella azteca	S	2.00	LC50	MOR		92.2	14445
Water flea / Daphnia magna	S	2.00	LC50	MOR		320000	5184
Water flea / Daphnia magna	S	2.00	LC50	MOR		105.7	14445
Bluegill / Lepomis macrochirus	S	4.00	LC50	MOR		4000	5590
Channel catfish / Ictalurus punctatus	S	4.00	LC50	MOR	A	36.0	4087
SALT WATER							
Polychaete worm / Nereis arenaceodentata	S	4.00	LC50	MOR		500	5053
Opossum shrimp / Mysidopsis bahia	S	2.00	LC50	MOR	A	5.32	18274
Opossum shrimp / Mysidopsis bahia	S	2.00	LC50	MOR	A	63.8	18274
Clam / Mulinia lateralis	R	4.00	LC50	MOR	A	1.8	18274
Clam	R	4.00	LC50	MOR	A	3310	18274

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Ref No.
Mulinia lateralis Sheepshead minnow Cyprinodon variegatus	S	4.00	LC50	MOR		>560000	10366

CHRONIC DATA

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Ref No.
FRESH WATER							
Fathead minnow Pimephales promelas	R	30.0	LC50	MOR	A	7.1	4087

PLANT DATA

Species Common Name / Species Latin Name	Ex Ty	Duration (days)	Endpoint	Effect	Conc Type	Conc (ug/L)	Ref No.
FRESH WATER							
Green algae Selenastrum capricornutum	NR	1.00	EC50	CLR		37700	9607
Green algae Selenastrum capricornutum	NR	2.00	EC50	CLR		32200	9607
Green algae Selenastrum capricornutum	NR	3.00	EC50	CLR		4140	9607
Green algae Selenastrum capricornutum	NR	4.00	EC50	CLR		54600	9607
Green algae Selenastrum capricornutum	NR	4.00	EC50	PGR		54400	9607
Green algae Selenastrum capricornutum	NR	4.00	NOEC	CLR		32000	9607
Bread wheat Triticum aestivum	S	10.0	NR	BMS		230	13737
Bread wheat Triticum aestivum	S	10.0	NR	BMS		210	13737
Bread wheat Triticum aestivum	S	10.0	NR	BMS		210	13737
Bread wheat Triticum aestivum	S	10.0	NR	BMS		260	13737
Bread wheat Triticum aestivum	S	10.0	NR	DVP		230	13737
Bread wheat Triticum aestivum	S	10.0	NR	DVP		210	13737
Bread wheat Triticum aestivum	S	10.0	NR	GRO		230	13737
Bread wheat Triticum aestivum	S	10.0	NR	GRO		230	13737
Inflated duckweed Lemna gibba	R	8.00	NR	CLR		2000	4462
Inflated duckweed Lemna gibba	S	2.00-8.00	NR	PGR		2000	18193
Inflated duckweed Lemna gibba	R	8.00	NR	PGR		500 - 16000	4462
Inflated duckweed Lemna gibba	R	8.00	NR	PGR		2000	4462
Inflated duckweed	S	8.00	NR	PGR		2000	18191

Lemna gibba							
Inflated duckweed	S	8.00	NR	RSD	2000		18191
Lemna gibba							
SALT WATER							
Algae, algal mat	S	2.00		PGR	1000		7134
Algae							
Algae, algal mat	S	6.00		PGR	10000		7134
Algae							
Diatom	NR	4.00	EC50	PSE	45000		9607
Skeletonema costatum							
MEDIA NOT REPORTED							
Blue-green algae	S	.083		NFX	1157	nmol/L	11578
Anabaena flosaquae							
Blue-green algae	S	.083		NFX	2146	nmol/L	11578
Anabaena flosaquae							
Blue-green algae	S	.083		NFX	2146	nmol/L	11578
Anabaena flosaquae							
Blue-green algae	S	14.0		PGR	38		11484
Anabaena flosaquae							

BIOCONCENTRATION DATA

Species Common Name Species Latin Name	Ex Ty	Duratio (days)	Endpoint Effect	Conc Type	BCF	Ref No.
FRESH WATER						
Water flea Daphnia magna	S	1.00	BCF	RSD	1741.8	12675
SALT WATER						
Polychaete worm Nereis virens	F	4.00	BCF	RSD	720	7518
Bay shrimp, Sand shrimp Crangon septemspinosa	F	4.00	BCF	RSD	180	7518
Bay shrimp, Sand shrimp Crangon septemspinosa	F	4.00	BCF	RSD	310	7518
Sand gaper, soft shell cla Mya arenaria	F	4.00	BCF	RSD	4120	7518
Common bay mussel,blue mus Mytilus edulis	F	4.00	BCF	RSD	5920	7518

OTHER DATA

Species Common Name Species Latin Name	Ex Ty	Duratio (days)	Endpoint Effect	Conc Type	Conc (ug/L)	Ref No.
FRESH WATER						
Sea lamprey Petromyzon marinus	S	1.00		STR	5000	638
Bullfrog Rana catesbeiana	F	4.00	LOEC	LOC	37.97	18947

Bullfrog Rana catesbeiana	F	2.00-4.00	NOEC	LOC	10.97 - 59.48	18947
Bullfrog Rana catesbeiana	F	4.00	NOEC	LOC	10.97	18947
Bullfrog Rana catesbeiana	F	4.00	NR	HIS	10.97 - 59.48	18947
Bullfrog Rana catesbeiana	F	4.00	NR	MOR	59.48	18947
Oligochaete, worm Lumbriculus variegatus	R	4.00	NR	RSD	4.7 - 143	14854
Oligochaete, worm Lumbriculus variegatus	R	4.00	NR-ZERO	MOR	4.7 - 143	14854
Oligochaete Stylaria lacustris	S	2.00	LC50	MOR	>220	14445
Oligochaete Stylaria lacustris	S	10.0	LC50	MOR	>137	14445
Oligochaete Stylaria lacustris	S	2.00	NOEC	MOR	>220	14445
Oligochaete Stylaria lacustris	S	10.0	NOEC	MOR	115	14445
Scud Diporeia sp.	NR	10.0-30.0	NR	MOR	0.089 -1760nmol/L	17868
Scud Diporeia sp.	NR	10.0-30.0	NR	RSD	0.089 -1760nmol/L	17868
Scud Hyalella azteca	NR	1.00	LC50	MOR	>500	18129
Scud Hyalella azteca	S	10.0	LC50	MOR	30.3	14445
Scud Hyalella azteca	S	10.0	LC50	MOR	60.6	14445
Scud Hyalella azteca	NR	1.00	LOEC	BIO	500	18129
Scud Hyalella azteca	NR	1.00	NOEC	BIO	100	18129
Scud Hyalella azteca	S	2.00	NOEC	MOR	<74	14445
Scud Hyalella azteca	S	10.0	NOEC	MOR	18	14445
Scud Hyalella azteca	S	10.0	NOEC	MOR	<24	14445
Scud Hyalella azteca	NR	10.0-30.0	NR	GRO	0.016 - 569nmol/L	17868
Scud Hyalella azteca	NR	10.0-30.0	NR	MOR	0.016 - 569nmol/L	17868
Scud Hyalella azteca	NR	10.0-30.0	NR	RSD	0.016 - 569nmol/L	17868
Scud Hyalella azteca	NR	1.00	NR-ZERO	MOR	500	18129
Brine shrimp Artemia salina	S	.042	LC50	MOR	40	11437
Water flea Daphnia magna	S	2.00		MOR	<8800	5184
Water flea Daphnia magna	S	1.00	EC50	IMM	196	17714
Water flea Daphnia magna	S	.042	LC50	MOR	4	11437
Water flea Daphnia magna	S	1.00	LC50	MOR	1300000	5184
Water flea Daphnia magna	S	10.0	LC50	MOR	102.6	14445

Water flea Daphnia magna	S	10.0	LC50	MOR	110.5		14445
Water flea Daphnia magna	R	0.45	LT50	MOR	9.0		12675
Water flea Daphnia magna	S	2.00	NOEC	MOR	85		14445
Water flea Daphnia magna	S	10.0	NOEC	MOR	90		14445
Water flea Daphnia magna	S	10.0	NOEC	MOR	75		14445
Yellow fever mosquito Aedes aegypti	S	.042	LC50	MOR	12		11437
Yellow fever mosquito Aedes aegypti	S	1.00	LC50	MOR	10		12520
Mosquito Aedes taeniorhynchus	S	1.00	LC50	MOR	48		12520
Midge Chironomus tentans	S	2.00	LC50	MOR	>250		14445
Midge Chironomus tentans	S	10.0	LC50	MOR	37.8		14445
Midge Chironomus tentans	S	10.0	LC50	MOR	23.6		14445
Midge Chironomus tentans	S	2.00	NOEC	MOR	>250		14445
Midge Chironomus tentans	S	10.0	NOEC	MOR	30		14445
Midge Chironomus tentans	S	10.0	NOEC	MOR	20		14445
Southern house mosquito Culex quinquefasciatus	S	1.00	LC50	MOR	45		12520
Bluegill Lepomis macrochirus	S	1.00	LC50	MOR	>32000		5590
Common, mirror, colored, c Cyprinus carpio	I	1.00- 14.0	NR	ENZ	25	mg/kg	4192
Common, mirror, colored, c Cyprinus carpio	I	1.00- 14.0	NR	RSD	25	mg/kg	4192
Fathead minnow Pimephales promelas	S	.021	LC50	~MOR	200		11437
Fathead minnow Pimephales promelas	F	6.00	NR	HAT	6.2 - 7.9		15050
Fathead minnow Pimephales promelas	F	0.25- 4.00	NR	HIS A	6.1 - 12.5		18374
Fathead minnow Pimephales promelas	S	4.00	NR	MOR A	23.4 - 155.4		4087
Fathead minnow Pimephales promelas	F	14.0	NR	MOR	6.2 - 7.9		15050
Fathead minnow Pimephales promelas	F	4.00	NR	PHY A	6.1 - 12.5		18374
Rainbow trout,donaldson tr Oncorhynchus mykiss	I	3.00- 5.00	NR	ENZ	30	mg/kg	5219
SALT WATER							
Amphipod Ampelisca abdita	NR	1.00	LC50	MOR	>100		18129
Amphipod Ampelisca abdita	NR	1.00	LOEC	BIO	35		18129
Amphipod Ampelisca abdita	NR	1.00	NOEC	BIO	3.5		18129
Amphipod	NR	1.00	NR-ZERO	MOR	100		18129

Ampelisca abdita								
Scud	R	4.00	EC50	BEH		54		18408
Corophium insidiosum								
Scud	R	4.00	LC50	MOR		85		18408
Corophium insidiosum								
Amphipod	R	4.00	EC50	BEH		>70		18408
Eohaustorius estuarius								
Amphipod	R	4.00	LC50	MOR		>70		18408
Eohaustorius estuarius								
Scud	R	4.00	EC50	BEH		27		18408
Grandidierella japonica								
Scud	R	4.00	LC50	MOR		36		18408
Grandidierella japonica								
Amphipod	R	4.00	EC50	BEH		51		18408
Leptocheirus plumulosus								
Amphipod	R	4.00	LC50	MOR		>98		18408
Leptocheirus plumulosus								
Amphipod	R	4.00	EC50	BEH		63		18408
Rhepoxynius abronius								
Amphipod	NR	1.00	LC50	MOR		>100		18129
Rhepoxynius abronius								
Amphipod	R	4.00	LC50	MOR		>70		18408
Rhepoxynius abronius								
Amphipod	NR	10.0	LC50	MOR	A	22.7		18785
Rhepoxynius abronius								
Amphipod	NR	10.0	LC50	MOR	A	29.4		18785
Rhepoxynius abronius								
Amphipod	NR	10.0	LC50	MOR	A	24.2		18785
Rhepoxynius abronius								
Amphipod	NR	10.0	LC50	MOR	A	11.1		18785
Rhepoxynius abronius								
Amphipod	NR	1.00	LOEC	BIO		35		18129
Rhepoxynius abronius								
Amphipod	NR	1.00	NOEC	BIO		3.5		18129
Rhepoxynius abronius								
Amphipod	NR	1.00	NR-ZERO	MOR		100		18129
Rhepoxynius abronius								
Opossum shrimp	NR	4.00	LC50	MOR		40		9607
Mysidopsis bahia								
Clam	R	4.00	EC50	GRO	A	>0.81		18274
Mulinia lateralis								
Clam	R	4.00	EC50	GRO	A	900		18274
Mulinia lateralis								
Clam	R	4.00	EC50	MUL	A	1.09		18274
Mulinia lateralis								
Clam	R	4.00	EC50	MUL	A	58.8		18274
Mulinia lateralis								
Common bay mussel,blue mus	S	< .070	EC50	FOC		80		3742
Mytilus edulis								
Common bay mussel,blue mus	NR	7.00	NR	BIO		20		16822
Mytilus edulis								
Common bay mussel,blue mus	NR	7.00	NR	BIO		200		16822
Mytilus edulis								
Common bay mussel,blue mus	R	1.00- 7.00	NR	CEL		160	ul	16112
Mytilus edulis								
Common bay mussel,blue mus	R	14.0	NR	CEL		250		17784
Mytilus edulis								
Common bay mussel,blue mus	NR	7.00	NR	ENZ		20	- 400	16822
Mytilus edulis								
Common bay mussel,blue mus	NR	14.0-	NR	ENZ		0.5	- 6	16903

Mytilus edulis		28.0				
Common bay mussel,blue mus	NR	7.00	NR	HEM	200	16822
Mytilus edulis						
Common bay mussel,blue mus	NR	7.00	NR	HEM	20	16822
Mytilus edulis						
Common bay mussel,blue mus	R	14.0	NR	PHY	250	17784
Mytilus edulis						
Common bay mussel,blue mus	NR	14.0-	NR	RSD	0.5 - 6	16903
Mytilus edulis		28.0				
Sheepshead minnow	S	1.00	LC50	MOR	>560000	10366
Cyprinodon variegatus						
Sheepshead minnow	S	2.00	LC50	MOR	>560000	10366
Cyprinodon variegatus						
Sheepshead minnow	S	3.00	LC50	MOR	>560000	10366
Cyprinodon variegatus						
Sheepshead minnow	S	4.00	NOEC	MOR	560000	10366
Cyprinodon variegatus						

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