

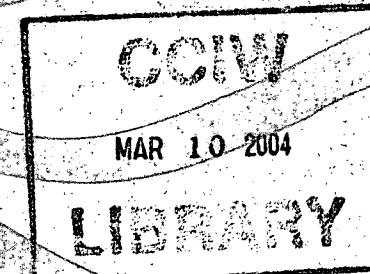
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**PHARMACEUTICALS AND PERSONAL CARE
PRODUCTS IN THE ENVIRONMENT: A SUMMARY
OF PUBLISHED LITERATURE**

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Table 7: Summary of Physical-Chemical Data

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<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
[S,S]-EDDS	vapour pressure	<10E-05	Pa			Jaworska et al, 1999
	water solubility	>1000	g/l			Jaworska et al, 1999
5-Fluoracil	MW	130	g/mol			Guarino and Lech, 1986
acetaminophen	pKa	9.5				NTP, 1999; Cited in Stuer-Lauridsen et al, 2000
actinomycin D	MW	1255.5	g/mol			Guarino and Lech, 1986
	MW	1255.5	g/mol			Guarino and Lech, 1986
aminohippuric acid	MW	194.2	g/mol			Guarino and Lech, 1986
amoxicillin	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
ampicillin	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
androsterone	solubility in water	5.75	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
antipyrine	MW	188.2	g/mol			Guarino and Lech, 1986
ASA	pKa	3.5				NTP, 1999; Cited in Stuer-Lauridsen et al, 2000
benzoic acid	MW	68.8	g/mol			Guarino and Lech, 1986
canrenone	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
cephalexin	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
chloramphenicol acetate	solubility in water	0.16	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
chlor diazepoxide	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
chlortetracycline	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
CI Solvent Yellow 14	water solubility			water		Moller and Wallin, 2000
ciprofloxacin	vapour pressure	low		predicted		Halling-Sorenson et al, 2000
	water solubility	>2	g/l			Halling-Sorenson et al, 2000
clindamycin	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
colchicine	MW	399.4	g/mol			Guarino and Lech, 1986

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
cyclophosphamide	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
	MW	261	g/mol			Guarino and Lech. 1986
DEA	boiling point	268	C @ 760 mm-Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	freezing point	28	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	Henry's Law constant	5.35 x 10-14	atm.m3/mol			Lyman et al. 1982 cited in Davis and Carpenter, 1997
	MW	105.14	g/mole			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	vapour pressure	6.31 x 10-1	Pa			Lyman et al. 1982 cited in Davis and Carpenter, 1997
	water solubility	3.180 x 10E5	mg/l @ 20 C	theoretical		Lyman et al. 1982 cited in Davis and Carpenter, 1997
decamethonium	MW	258	g/mol			Guarino and Lech. 1986
dehydroisoandrosterone	solubility in water	6.85	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
diazepam	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
diethylstilbestrol	MW	268.4	g/mol			Guarino and Lech. 1986
dimethisterone	solubility in water	0.29	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
ellipticine	MW	246.3	g/mol			Guarino and Lech. 1986
estradiol	solubility in water	12.96	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
estriol	solubility in water	13.25	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
estrone	solubility in water	12.42	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
ethinyl estradiol	solubility in water	4.83	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
ethynodiol diacetate	solubility in water	0.26	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
etiocholanolone	solubility in water	7.67	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
furosemide	pKa	3.9				NTP, 1999; Cited in Stuer-Lauridsen et al., 2000
hycanthone	MW	356.5	g/mol			Guarino and Lech. 1986
hydroquinone	MW	110.11	g/mol			Devilliers et al, 1990
	vapor pressure	1	mm Hg (132.4 C)			Devilliers et al, 1990

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hydroquinone	water solubility	59,000	mg/l (15 C)			Devillers et al, 1990
	water solubility	70,000	mg/l (25 C)			Devillers et al, 1990
	water solubility	94,000	mg/l (28 C)			Devillers et al, 1990
ibuprofen	pKa	5.7				NTP, 1999; Cited in Stuer-Lauridsen et al, 2000
iopromide	vapour pressure	<10E-08	Pa	calculated	calc based on molecular structure	Steger-Hartmann et al, 1999
	water solubility	770	g/l	prepared drug formulation - solubility could be higher		Steger-Hartmann et al, 1999
ivermectin	extinction coefficient	30100 (245)		in ethanol		Bloom and Matheson, 1993
	mol wt	875	g/mol			Bloom and Matheson, 1993
	vapour pressure	<1.5E-9	mmHg			Bloom and Matheson, 1993
	water solubility	4	mg/l			Bloom and Matheson, 1993
LAB	Henry's law	95	Pa.m3/mol			Gledhill et al. 1991 cited in Binetti et al. 2000
	water solubility	0.041	mg/l			HÜLS UNPUBLISHED CITED IN Binetti et al. 2000
levodopa	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
MEA	boiling point	171	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	freezing point	10	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	Henry's Law constant	2.45 x 10-7	atm.m3/mol			Lyman et al. 1982 cited in Davis and Carpenter, 1997
	MW	61.09	g/mole			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	vapour pressure	1.00 x 102	Pa			Lyman et al. 1982 cited in Davis and Carpenter, 1997
medroxyprogesterone acetate	water solubility	2.465 x 10E5	mg/l @ 20 C	theoretical		Lyman et al. 1982 cited in Davis and Carpenter, 1997
	solubility in water	1.95	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
meprobamate	lipophilicity	lipophilic?		assumed since possibly found in breast milk		Richardson and Bowron, 1985
mestranol	solubility in water	0.32	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
methotrexate	MW	454.5	g/mol			Guarino and Lech, 1986
MIPA	boiling point	159	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	freezing point	3	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	Henry's Law constant	2.11 x 10-6	atm.m3/mol			Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	MW	75.11	g/mole			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	vapour pressure	1.90 x 102	Pa			Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	water solubility	6.709 x 104	mg/l @ 20 C	theoretical		Lyman et al. 1982 cited in Davis and Carpenter, 1997
musk nitro - xylene	Henry's law constant	0.0061	Pa.m3/mol			Tas, Balk et al, 1997
	melting point	137	C			Tas, Balk et al, 1997
	mol/wt	294.3	g/mol			Tas, Balk et al, 1997
	vapour pressure	0.04E-03	Pa			Tas, Balk et al, 1997
	water solubility	1.9	mg/l			Tas, Balk et al, 1997
	water solubility	0.46	mg/l			Tas, Balk et al, 1997
naproxen	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
nicotine	MW	162.2	g/mol			Guarino and Lech, 1986
nitrazepam	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
nitrofurantoin	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
norethindrone	solubility in water	1.44	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
norethindrone acetate	solubility in water	0.98	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
norethynodrel	solubility in water	0.65	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
olestra	density	0.88	relative to water			Allgood et al, 1997
	water solubility	5 to 42	ug/L			Allgood et al, 1997
oxolinic acid	MW	261.23	g/mole			HoltenLutzhoff et al., 2000
	pKa	6.8				HoltenLutzhoff et al., 2000

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
penicillin G	MW	333.5	g/mol			Guarino and Lech. 1986
pentobarbital	MW	226.3	g/mol			Guarino and Lech. 1986
phenobarbital	MW	232.2	g/mol			Guarino and Lech. 1986
pivmecillinam	vapour pressure	low		predicted		Halling-Sorensen et al., 2000
	water solubility	>2	g/l	assumed same as mecillinam		Halling-Sorensen et al., 2000
pregnanediol	solubility in water	8.36	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
progesterone	solubility in water	9.12	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
puromycin	MW	471	g/mol			Guarino and Lech. 1986
riboflavin-5-phosphate	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
riboflavin-5'-phosphate:sodium	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
salicylic acid	MW	138	g/mol			Guarino and Lech. 1986
	MW	138	g/mol			Guarino and Lech. 1986
sodium lauryl sulphate	MW	265	g/mol			Guarino and Lech. 1986
sulfanilamide	MW	172.2	g/mol			Guarino and Lech. 1986
TEA	boiling point	340	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	freezing point	21	C @ 760 mm Hg			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	Henry's Law constant	3.38 x 10-19	atm.m3/mol			Lyman et al. 1982 cited in Davis and Carpenter, 1997
	MW	149.19	g/mole			The Dow Chemical Company, 1988 cited in Davis and Carpenter, 1997
	vapour pressure	2.39 x 10-2	Pa			Lyman et al. 1982 cited in Davis and Carpenter, 1997
	water solubility	6.27 x 105	mg/l @ 20°C	theoretical		Lyman et al. 1982 cited in Davis and Carpenter, 1997
testosterone	solubility in water	8.875	mg/l	double-distilled water after 2h	TLC/GLC	Tabak et al., 1981
tetracycline	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
	MW	444.4	g/mol			Guarino and Lech. 1986
thiamine hydrochloride	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
thiamine mononitrate	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
tolbutamide	lipophilicity	lipophilic		assumed since found in breast milk		Richardson and Bowron, 1985
trimethoprim	vapour pressure	low		predicted		Halling-Sorensen et al, 2000
	water solubility	0.3-0.4	g/l			Halling-Sorensen et al, 2000
warfarin	MW	308.3	g/mol			Guarino and Lech, 1986

Table 8: Summary of Environmental Fate Data

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chemical	descriptor	value	units	test matrix	method/parameters	reference
[R,R]-EDDS	biodegradation	partially degraded			various biodeg tests	Schowanek et al, 1997
[S,S]-EDDS	biodegradation	readily biodegradable			modified Sturm test (OECD 301B); Activated sludge at steady state (CAS, OECD 303 A)	Jaworska et al, 1999
	biodegradation	6.3	d	half-life in river water; starting conc 100 µg/l radiolabelled EDDS; unacclimated	measured	Jaworska et al, 1999
	biodegradation	2.5	d	half-life in sludge amended soil; starting conc 1 mg/kg radiolabelled EDDS	measured	Jaworska et al, 1999
	Koc activated sludge	40	l/kg			Jaworska et al, 1999
	Koc soil solids	28	l/kg			Jaworska et al, 1999
	log Kow	-4.7				Jaworska et al, 1999
acetaminophen	biodegradation	does not biodegrade				Henschel et al, 1997
	biodegradation	57	%		OECD 301F	Henschel et al, 1997
	biodegradation	readily biodegradable after acclimatization		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
	Kd (soil)	0.43	l/kg	calculated from Dow		Stuer-Lauridsen et al, 2000
	Kd (soil)	0.4	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	0.49			calculated	Henschel et al, 1997
	log Kow	0.46, 0.49				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al, 2000
amitriptyline	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
amlodipine	Kd (soil)	143.5	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	3				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al, 2000
ampicillin	biodegradation	48% biodegrad		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
antipyrine	STP removal efficiency	33	%	STP removal efficiency		Ternes, 1998; Cited in Daughton and Ternes, 1999
ASA	biodegradation	70	%	after 24 h initial conc 10µg/l activated sludge		Ternes et al, 1998
	biodegradation	90	%	after 72 h initial conc 10µg/l activated sludge		Ternes et al, 1998
	biodegradation	readily biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
	Kd (soil)	0.00007	l/kg	calculated from Dow		Stuer-Lauridsen et al, 2000

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
ASA	Kd (soil)	2.2	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	1.19				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al, 2000
	STP removal efficiency	81	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
bacampicillin	biodegradation	48% biodegrad		sewage treatment	assumed same as penicillin	Richardson and Bowron, 1985
bacitracin	biodegradation	22.5	d	half-life in feces (5%)/soil mix; 20C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation	12	d	half-life in feces (5%)/soil mix; 30C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
bambemycin	biodegradation	persist <25 d		feces (5%)/soil mix; >20C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
bendroflumethiazide	Kd (soil)	2.2	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	1.19				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al, 2000
bezafibrate	STP removal efficiency	83	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
	STP removal efficiency	27-50	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
biphenylof	STP removal efficiency	extensive		STP removal efficiency		Temes et al, 1998; Cited in Daughton and Temes, 1999
budesonide	Kd (soil)	3.3	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	1.36		calculated		Advanced Chemistry Development, 1995; Cited in Stuer-Lauridsen et al, 2000
caffeine	biodegradation	readily biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
caffeine citrate	biodegradation	readily biodegradable		sewage treatment	assumed same as caffeine	Richardson and Bowron, 1985
carbamazepin	log Kow	2.5				Sedlak et al. 2000
cefotiam dihydrochloride	biodegradability	7;10	%	biodegradation after 28 d ; after 40 days	closed bottle test (OECD 301 D)	Al-Ahmad et al, 1999
cefotiofur sodium	biodegradation	22.5	d	half-life in soil; pH 5		Gibertson et al, 1990; Cited in Halling-Sorensen et al, 2000
	biodegradation	49	d	half-life in soil; pH 7		Gibertson et al, 1990; Cited in Halling-Sorensen et al, 2000
	biodegradation	41.1	d	half-life in soil; pH 9		Gibertson et al, 1990; Cited in Halling-Sorensen et al, 2000
	biodegradation	100.3	d	half-life in water; pH 5		Gibertson et al, 1990; Cited in Halling-Sorensen et al, 2000
	biodegradation	8.0	d	half-life in water; pH 7		Gibertson et al, 1990; Cited in Halling-Sorensen et al, 2000
	biodegradation	4.2	d	half-life in water; pH 9		Gibertson et al, 1990; Cited in Halling-Sorensen et al, 2000

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
ceftiofur sodium	photodegradation	minimal				Gilbertson et al, 1990; Cited in Halling-Sorensen et al, 2000
chlorhexidine	biodegradation	readily biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
chlorhexidine acetate	biodegradation	not biodegradable		sewage treatment	assumed same as chlorhexidine	Richardson and Bowron, 1985
chloroxylenol	STP removal efficiency	extensive		STP removal efficiency		Temes et al, 1998; Cited in Daughton and Temes, 1999
	STP removal efficiency	less extensive than chloroxylenol		STP removal efficiency		Temes et al, 1998; Cited in Daughton and Temes, 1999
chlortetracycline	biodegradation	88	% remaining	feces (5%)/soil mix; 30 d at 20C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation	44	% remaining	feces (5%)/soil mix; 30 d at 30C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation	100	% remaining	feces (5%)/soil mix; 30 d at 4C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
ciprofloxacin	biodegradability	0	%	3.5 mg/l test concentration; no biodegradation after 40 days		Kummerer et al, 2000
	biodegradability	0;0	%	biodegradation after 28 d ; after 40 days	closed bottle test (OECD 301 D)	Al-Ahmad et al, 1999
	biodegradation	not readily biodegradable		28 d BOD test	Oxytop system; OECD method	Halling-Sorensen et al, 2000
	biodegradation	1.5	d	half-life in activated sludge	OECD 302B - modified	Hartmann et al, 1998; Cited in Halling-Sorensen et al, 2000
	biodegradation	1.6-2.5	d	half-life in activated sludge	biodeg followed over time in 1l sludge in aerated batch reactor; analysis by HPLC	Halling-Sorensen et al, 2000
	Kd sludge-water	417		sorption to sludge		Halling-Sorensen et al, 2000
	log Kow	1.24		calculated ACD logP		Halling-Sorensen et al, 2000
	log Kow	0.28		measured Syracuse Research		www.esc.syres.com/interkow/estsoft.htm; Cited in Halling-Sorensen et al, 2000
	photo half life	90.2	min	at 10 mg/l; photolysis const k2 = 0.0111		Burhenne et al, 1997a
ciprofloxacin metabolites	biodegradation	detected		activated sludge after addition of ciprofloxacin		Halling-Sorensen et al, 2000
clofibrate	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
clofibric acid	biodegradation	not biodegradable			OECD 301F	Henschel et al, 1997
	log Kow	2.84			calculated	Henschel et al, 1997
	STP removal efficiency	15-34	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	STP removal efficiency	51	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
codeine	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985

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codeine sulfate	biodegradation	not biodegradable		sewage treatment	assumed same as codeine	Richardson and Bowron, 1985
cyclophosphamide	biodegradability	not biodegradable			battery of standard biodegradation tests recommended by OECD	Kummerer et al. 2000
	biodegradation	not biodegradable				Daughton and Temes, 1999
	biodegradation	not biodegradable		closed bottle test; 5 mg/ml; 57 d	OECD 301D	Kummerer et al., 1998; Cited in Halling-Sorensen et al., 2000
	biodegradation	not biodegradable		lab scale sewage treatment		Steiger-Hartmann et al., 1998; Cited in Halling-Sorensen et al., 2000
danofloxacin	photo half life	20.6	min	at 10 mg/l; photolysis const k1 = 0.0336	dissolv. H2O irrad 200 W/m2 @ 25+2 C for 4 h; parent measured HPLC	Burhenne et al., 1997a
DEA	air	0.01	%	partitioning to air	fugacity modelling	Davis and Carpenter, 1997
	biodegradability	6.8 to 88	%	biodegraded by sewage inoculum 20 days	BOD tests	Lamb and Jenkins, 1952 and Price et al 1974 cited in Davis and Carpenter, 1997
	Koc	3.97				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	log BCF	-1.32				Lyman et al. 1982 cited in Davis and Carpenter, 1997
	log Kow	-1.43				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	sediment	0	%	partitioning to sediment	fugacity modelling	Davis and Carpenter, 1997
	soil	0	%	partitioning to soil	fugacity modelling	Davis and Carpenter, 1997
	water	99.99	%	partitioning to water	fugacity modelling	Davis and Carpenter, 1997
dextropropoxyphene	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
dextropropoxyphene napsylate	biodegradation	not biodegradable		sewage treatment	assumed same as codeine	Richardson and Bowron, 1985
diatrozoate	biodegradability	poor		aerobic activated sludge system		Kalsch, 1999
	biodegradability	0.15	day -1	environmental degradation rate in river water and sediment		Kalsch, 1999
	biodegradation	not biodegradable				Kalsch, 1999; Cited in Daughton and Temes, 1999
diclofenac	biodegradation	none		nonsterile bottled water stored in dark	chemical analysis	Buser et al. 1998b
	photodegradation	rapid photodeg to multiple products				Buser, Poiger et al, 1998; Cited in Daughton and Temes, 1999
	photodegradation	>99	%	fortified lake water 100 ng/l 4 day period	GC/MS	Buser et al. 1998b
	photodegradation	0.8	h-1	1 ug/l aqueous soin diclofenac in pyrex glass tubes exposed to natural sunlight for 0.2, and 4 hours	GC/MS	Buser et al. 1998b

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
diclofenac	STP removal efficiency	9-75	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	STP removal efficiency	50	%	STP removal efficiency		Buser, Poiger et al, 1998; Cited in Daughton and Temes, 1999
	STP removal efficiency	68	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
diethylstilbestrol	biodegradation	not biodegradable		feces		Gregers-Hansen, 1984; Cited in Halling-Sorensen et al, 2000
	biodegradation	not biodegradable		soil		Gregers-Hansen, 1984; Cited in Halling-Sorensen et al, 2000
dimethicone	biodegradation	not biodegradable		sewage treatment		Richardson and Bowron, 1985
DPTA	biodegradation	not readily biodegraded				Sillanpaa, 1997
EDTA	phototransformation	some				Sillanpaa, 1997
	biodegradation	not readily biodegraded		9 different tests		Gerike and Fischer, 1979; Cited in Sillanpaa, 1997
eflornimycin	phototransformation	some				Sillanpaa, 1997
	Koc	580-1100		soils - various		Yeager and Hailey, 1990; Cited in Halling-Sorensen et al, 2000
enrofloxacin	environmental half life	1.6 and 55.4	hours		calculated GCSOLAR program by Zepp and Cline (1977)	Burhenne et al., 1997a
	photo half life	36.2	min	at 10 mg/l ; photolysis const. 0.0191 min-1 dissolv. H2O ltrad 200 W/m2 @ 25+2 C for 4 h; parent measured HPLC		Burhenne et al., 1997a
enrofloxacin - phototransformation product ephedrine	environmental half life	0.98 and 36.2	days	degradation product compound 8	calculated GCSOLAR program by Zepp and Cline (1977)	Burhenne et al., 1997a
	biodegradation	readily biodegradable after acclimatization		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
ephedrine (racemic)	biodegradation	readily biodegradable after acclimatization		sewage treatment	assumed same as ephedrine	Richardson and Bowron, 1985
ephedrine sulfate	biodegradation	readily biodegradable after acclimatization		sewage treatment	assumed same as ephedrine	Richardson and Bowron, 1985
erythromycin	biodegradation	11.5	d	half-life in feces (5%)/soil mix; 20C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation	97	%	remaining in feces (5%)/soil mix; 30 d at 4C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985

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erythromycin lactobionate	biodegradation	not biodegradable		sewage treatment	assumed same as erythromycin	Richardson and Bowron, 1985
erythromycin stearate	biodegradation	not biodegradable		sewage treatment	assumed same as erythromycin	Richardson and Bowron, 1985
estradiol	Kd (soil)	1468	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log.Kow	4.01				Syracuse Science Centre, 1999; Cited in: Stuer-Lauridsen et al, 2000
estradiol -17B	log Kow	4.4				Sedlak et al. 2000
estrogen	biodegradation	does not biodegrade				Henschel et al, 1997
	biodegradation	not biodegradable		feces		Gregers-Hansen, 1984; Cited in Halling-Sorensen et al, 2000
	biodegradation	not biodegradable		lake water		Shore et al, 1993; Cited in Halling-Sorensen et al, 2000
	biodegradation	not biodegradable		sewage		Shore et al, 1993; Cited in Halling-Sorensen et al, 2000
	biodegradation	not biodegradable		soil		Gregers-Hansen, 1984; Cited in Halling-Sorensen et al, 2000
	Kd (soil)	16,859	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log.Kow	5.7				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al, 2000
ethinyl estradiol	bioaccumulation	104 to 106 times		conc in fish bile vs sewage effluent	GC/MS	Larsson et al. 1999
	biodegradation	slow		in sewage sludge		
	biodegradation	none		unchanged after 120 h in activated sludge system		Von Rathner and Sonneborn, 1979 cited in Aheme and Briggs, 1989
fenofibrate	STP removal efficiency	effective removal		STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
fenofibric acid	STP removal efficiency	4-45	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	STP removal efficiency	64	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
florfenicol	biodegradation	4.5	d	half-life in sediment		Lunestad et al, 1993; Cited in Halling-Sorensen et al, 2000
	biodegradation	degrades to persistent amine		sediment		Lunestad et al, 1993; Cited in Halling-Sorensen et al, 2000
flumequine	biodegradation	150	d	half-life in surface sediment		Lunestad et al, 1993; Cited in Halling-Sorensen et al, 2000
	half life - surface sediment	150	days			Hektoen et al., 1995 cited in Migliore et al. 2000

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flumequine	sorption	adsorbs		marine sediment		Hektoen et al, 1995; Cited in Halling-Sorensen et al, 2000
furazolidone	biodegradation	50h - 2 months		half-life		de Roij and de Vries, 1982; Cited in Halling-Sorensen et al, 2000
	biodegradation	degrad to inactive metabolite		surface sediment		Ervik, 1993; Cited in Halling-Sorensen et al, 2000
furosemide	Kd (sludge)	158	l/kg	measured		Holten Luzholt and Halling-Sorensen - submitted; Cited in Stuer-Lauridsen et al, 2000
	Kd (soil)	0.00122	l/kg	calculated from Dow		Stuer-Lauridsen et al, 2000
	Kd (soil)	15.4	l/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	2.03				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al, 2000
gemfibrozil	STP removal efficiency	69	%	STP removal efficiency		Terres, 1998; Cited in Daughton and Terres, 1999
	STP removal efficiency	16-46	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Terres, 1999
gentisic acid	STP removal efficiency	efficient removal	%	STP removal efficiency		Terres, 1998; Cited in Daughton and Terres, 1999
hexachlorophene	photodegradation	decomp in numerous products				Shaffer et al, 1970; Cited in Fishbein and Flamm, 1973
hydroquinone	BCF	870		activated sludge (5 days)		Freitag et al., 1985 cited in Devillers et al., 1990
	BCF	40		algae (24 h and 72 h)		Freitag et al., 1985 cited in Devillers et al., 1990
	biodegradation	+	within 9 days	10 ppm hydroquinone solution with inoculum from raw domestic sewage		Devillers et al, 1990
	biodegradation	95	%	300 ppm hydroquinone degraded within 2 days by bacteria acclimated to 500 ppm hydroquinone		Devillers et al, 1990
	log Kow	0.59				Devillers et al, 1990
	photodegradation	+		at 254 nm		Devillers et al, 1990
	photodegradation half-life	> 240	weeks	in January		Frank and Klopffer, 1988 cited in Devillers et al, 1990
	photodegradation half-life	<5	weeks	in June		Frank and Klopffer, 1988 cited in Devillers et al, 1990
ibuprofen	biodegradation	~20	days	half life in nonsterile lake water	enantioselective GC/MS analysis of methyl esters	Buser et al. 1999
	biodegradation	>97	%	IB in WWTP Influent mixed with activated sludge for 8 h	enantioselective GC/MS analysis of methyl esters	Buser et al. 1999
	biodegradation	readily biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985

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ibuprofen	Kd (sludge)	251	l/kg	measured		Holten-Luzhoft and Halling-Sorensen - submitted; Cited in Stuer-Lauridsen et al., 2000
	Kd (soil)	2.02	l/kg	calculated from Dow		Stuer-Lauridsen et al., 2000
	Kd (soil)	453	l/kg	calculated from Kow		Stuer-Lauridsen et al., 2000
	log Kow	-0.4				Sedlak et al. 2000
	log Kow	3.5				Syracuse Science Centre, 1999; Cited in Stuer-Lauridsen et al., 2000
	photodegradation	none		sterile fortified lake water 37 d	enantioselective GC/MS analysis of methyl esters	Buser et al. 1999
	STP removal efficiency	90	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
	STP removal efficiency	>95	%	STP removal efficiency		Buser, Polger et al, 1999; Cited in Daughton and Temes, 1999
	STP removal efficiency	22-75	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	biodegradability	not biodegradable			battery of standard biodegradation tests recommended by OECD	Kummerer et al 2000
ifosamide	biodegradation	not biodegradable		sewage treatment		
	STP removal efficiency	no removal		STP removal efficiency		Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	STP removal efficiency	75	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
indomethacin	STP removal efficiency	71-83	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	biodegradability	85	%	biotransformed in activated sludge		Kalsch, 1999
iopromide	biodegradability	0.04	day -1	environmental degradation rate in river water and sediment		Kalsch, 1999
	biodegradation	not biodegradable				Kalsch, 1999; Cited in Daughton and Temes, 1999
	biodegradation	see conclusions				unpublished report; Steger-Hartmann et al, 1999Cited in
	biodegradation	not readily biodegradable		DOC content over 28 d	OECD guideline 301E	Steger-Hartmann et al, 1999
	log Kow	-2.33		measured	shake flask method	Steger-Hartmann et al, 1999
	photodegradation	1.8-25.3	d	half-life in standardized test		unpublished report; Steger-Hartmann et al, 1999Cited in
	biodegradation	not biodegradable-- identity unknown				Kalsch, 1999; Cited in Daughton and Temes, 1999
ivermectin	biodegradation	1-2	wk	half-life in clay loam in summer		Bloom and Matheson, 1993

chemical	descriptor	value	units	test matrix	method/parameters	reference
ivermectin	biodegradation	52	wk	half-life in clay loam in winter		Bloom and Matheson, 1993
	biodegradation	93-240	d	half-life in soil/feces mix in dark; lab conditions		Halley et al., 1989; Cited in Helling-Sorensen et al, 2000
	biodegradation	1-2	wk	half-life in soil/feces mix; field conditions; summer		Halley et al., 1989; Cited In Helling-Sorensen et al, 2000
	biodegradation	14-28	d	half-life in various soils in lab; start conc 0.1-1 ppm		Bull et al, 1984; Cited In Helling-Sorensen et al, 2000
	biodegradation	28-56	d	half-life in various soils in lab; start conc 50 ppm		Bull et al, 1984; Cited In Helling-Sorensen et al, 2000
	biodegradation	<6	d	persists in manure; spring conditions		Lumaret et al, 1993; Cited In Helling-Sorensen et al, 2000
	half lives - soil	93 and 240	days	soil degradation half lives		Halley et al. 1989
	Koc	12660-15700				Bloom and Matheson, 1993
	Koc	12600 -15, 700				Halley et al. 1989
	Kow	1651				Bloom and Matheson, 1993
	leachability	no leaching potential		soil		Bull et al, 1984; Cited In Helling-Sorensen et al, 2000
	photodegradation	12	h	half-life at water surface in summer		Bloom and Matheson, 1993
	photodegradation	39	h	half-life at water surface in winter		Bloom and Matheson, 1993
	photodegradation	3	h	half-life in thin dry film on grass; sunlight		Halley et al., 1989; Cited in Helling-Sorensen et al, 2000
	photodegradation half life	3	h	photodegradation in direct summer sunlight		Halley et al. 1989
	plant uptake	minor uptake				Bull et al, 1984; Cited In Helling-Sorensen et al, 2000
	sorption	adsorbs		soil; immobile in 3 diff soils		Gruber et al, 1990; Cited in Helling-Sorensen et al, 2000
ketoprofen	STP removal efficiency	48-69	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
LAB	fate	326		earthworms	calculated using EUSES	Binetti et al. 2000
	BCF	35		in <i>Lepomis macrochirus</i>	with 14C-labelled LAB	Werner and Kimerle, 1982 cited in Binetti et al. 2000
	biodegradation - Anaerobic	> 70	%		ECETOC Technical report No. 28	Piresa, 1994a cited in Binetti et al. 2000
	biodegradation -STP	95-98	%		efficiency of removal by biological STP	Binetti et al. 2000
	biodegradation-aerobic	58-67	%		Shake Flask Carbon Evolution Procedure; GLP,OECD 301F	Binetti et al. 2000
	Koc	2.2x10 ⁴			calc. Solid/water partition coefficients in 4 soil types and different o.c.%	Gledhill et al. 1991 cited in Binetti et al. 2000
	log Kow	7.5 - 9.12				Binetti et al. 2000
	photodegradation	no significant		acetonitrile soln in direct sunlight		Gledhill et al. 1991 cited in Binetti et al. 2000

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L-ephedrine hydrochloride	biodegradation	readily biodegradable after acclimatization		sewage treatment	assumed same as ephedrine	Richardson and Bowron, 1985
L-menthol	biodegradation	readily biodegradable		sewage treatment	assumed same as menthol	Richardson and Bowron, 1985
MEA	air	0.86	%	partitioning to air	fugacity modelling	Davis and Carpenter, 1997
	biodegradability	40 to 64	%	biodegraded by sewage inoculum 20 days	BODtests	Young et al, 1968 and Lamb and Jenkins 1952 - cited in Davis and Carpenter, 1997
	Koc	4.62				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	log BCF	-1.23				Lyman et al. 1982 cited in Davis and Carpenter, 1997
	log Kow	-1.31				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	sediment	0	%	partitioning to sediment	fugacity modelling	Davis and Carpenter, 1997
	soil	0	%	partitioning to soil	fugacity modelling	Davis and Carpenter, 1997
	water	99.14	%	partitioning to water	fugacity modelling	Davis and Carpenter, 1997
meclofenamic acid	STP removal efficiency	bdl		STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
menthol	biodegradation	readily biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
meprobamate	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
meropenem	biodegradability	7.7	%	biodegradation after 28 d ; after 40 days	closed bottle test (OECD 301 D)	Al-Ahmad et al, 1999
methotrexate	biodegradation	not biodegradable			OECD 301F	Henschel et al, 1997
	biodegradation	+				Gallelli and Yokoyama, 1967 cited in Aheme et al., 1990
	log Kow	2.28			calculated	Henschel et al, 1997
methyldopa	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
metronidazole	biodegradability	0; 5	%	5.4 mg/l test concentration; no biodegradability after 28 days; after 40 days	closed bottle test (OECD 301 D)	Kummerer et al. 2000
	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
	soil sorption	weakly adsorbed		total amounts recovered in leachate of sandy loam and sand soils		Rabolle and Spiiid, 2000
MIPA	air	6.96	%	partitioning to air	fugacity modelling	Davis and Carpenter, 1997
	biodegradability	38 to 46	%	biodegraded by sewage inoculum 20 days	BODtests	Lamb and Jenkins, 1952 and Alexander and Batchelder, 1975 cited in Davis and Carpenter, 1997

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MIPA	Koc	9.95				Lyman et al. 1982 cited in Davis and Carpenter, 1997
	log BCF	-0.76				Lyman et al. 1982 cited in Davis and Carpenter, 1997
	log Kow	-0.96				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	sediment	0	%	partitioning to sediment	fugacity modelling	Davis and Carpenter, 1997
	soil	0	%	partitioning to soil	fugacity modelling	Davis and Carpenter, 1997
	water	93.04	%	partitioning to water	fugacity modelling	Davis and Carpenter, 1997
	biodegradation	33	d	biodegradation in soil; field conditions		Donoho, 1984; Cited in Helling-Sorensen et al, 2000
	biodegradation	60-70	% unchanged	feces in lab; anaerobic conditions; 10 wks;		Donoho, 1984; Cited in Helling-Sorensen et al, 2000
	log Kow	5.4			RP-HPLC	Eschke, 1999; Cited in Rimkus, 1999
	BCF	4100				Yamagishi et al., 1983 cited in Ippen, 1994.
musk -ADBI (Celestolide)	BCF	1600	l/kg wet wt	sunfish - flow through system - 16 d	OECD guideline 305E	unpublished report; Cited in Tas and Balk, 1997
	bioaccumulation -BCF fish	<100		field BCFs		Boleas et al. 1996
	bioaccumulation -BCF fish	10 to 60		rainbow trout (44 g) 21 d exposure to 1, 10 and 100 ug/l, static conditions daily water renewals		Boleas et al. 1996
	biodegradation	0	change in CO2 evolution	activated sludge - 28 day test - 10 and 100 ug/l musk ketone		Tas, Balk et al, 1997
	biodegradation	0	change in BOD	activated sludge (30 mg/l)- 28 day test - 39 mg/l musk ketone	OECD guideline 301C	Tas, Balk et al, 1997
	biodegradation	2.4-2.7	per d	half-life in sunfish - flow through system - 16 d	OECD guideline 305E	unpublished report; Cited in Tas and Balk, 1997
	log Kow	4.3				Tas, Balk et al, 1997
	log Kow	3.8				Tas, Balk et al, 1997
	log Kow	4.3				Tas, Balk et al, 1997
	log Kow	3.2				Tas, Balk et al, 1997
naproxen	log Kow	4.38		calculated using Hansch and Leo, 1979		Boleas et al. 1996
	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
	STP removal efficiency	68	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
	STP removal efficiency	15-78	%	STP removal efficiency		Stumpf et al, 1999; Cited in Daughton and Temes, 1999
neomycin	excretion	.97	% excreted	feces - livestock		Carli et al; 1982; Cited in Helling-Sorensen et al, 2000

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nicotinamide	biodegradation	readily biodegradable		sewage treatment	UK Dept. of Environment (1981); King (1981)	Richardson and Bowron, 1985
nonylphenol	bioaccumulation -BCF fish	90-125		fish exposed to 65 ug/l nonylphenol for 3 weeks		Blackburn et al. 1999
	log Kow	4.5				Ahel et al. 1993 cited in Blackburn et al. 1999
nonylphenol/alkylphenols	BCF	~300		fish		Ahel et al. 1993 cited in Sumpter, 1995
norethisterone	biodegradation	28 and 100	%	in activated sludge system in 6 h and 24h, respectively		Von Rathner and Sonneborn, 1979 cited in Aheme and Briggs, 1989
norfloxacin	photo half-life	105.9	min	at 10 mg/l; photolysis const k1 = 0.00655	dissolv. H ₂ O irrad 200 W/m ² @ 25+2 C for 4 h; parent measured HPLC	Burhenne et al., 1997a
ofloxacin	biodegradability	0	%	2.8 mg/l test concentration; no biodegradation after 40 days		Kummerer et al. 2000
o-hydroxyhippuric acid	STP removal efficiency	efficient removal	%	STP removal efficiency		Ternes, 1998; Cited in Daughton and Ternes, 1999
olaquindox	soil sorption	weakly adsorbed		total amounts recovered in leachate of sandy loam and sand soils		Rabolle and Spliid, 2000
olestra	BCF	<.50		Bluegill exposed to 0.025 mg/L for 28 d		Allgood et al. 1997
	biodegradation	5	% conversion to ¹⁴ CO ₂	conversion after 10 days		Allgood et al. 1997
	biodegradation	30 to 40	% conversion to ¹⁴ CO ₂	conversion after 49 days		Allgood et al. 1997
	log Kow	3.55		octanol/water		Allgood et al. 1997
	soil half-life	10 to 88	days	liquid (more rapid) or solid form		Allgood et al. 1997
	sorption coefficient (Kd)	104 to 2.87 x 10 ⁵	L/kg			Allgood et al. 1997
	sorption to sewage solids	>90	%			Allgood et al. 1997
	STP removal efficiency	85	%	after secondary treatment (olestra conc 0.06 to 1.0 mg.L ⁻¹)		Allgood et al. 1997
	waste water	61-85	%	after primary treatment (olestra conc 0.054 to 1 mg/L)		Allgood et al. 1997
oxolinic acid	biodegradation	150-1000	d	half-life in sediment		Ilectone et al., 1993; Cited in Halling-Sorensen et al., 2000
	log Kow	0.68				Holten-Lutzhoff et al., 2000
	sorption	adsorbs		marine sediment		Hektoen et al., 1995; Cited in Halling-Sorensen et al., 2000
oxytetracycline	biodegradation	9, 419	d	anaerobic conditions; 2 sites		Bjorkland et al., 1990; Cited in Halling-Sorensen et al., 2000
	soil sorption	strongly sorbed		in all soils tested; no sign of desorption		Rabolle and Spliid, 2000
	sorption	30-142	d	half-life for binding to sediment		Poliquin et al., 1992; 1993; Cited in Halling-Sorensen et al., 2000

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penicillin	biodegradation	inactivated		feces (5%)/soil mix		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
penicillin G	biodegradability	27.36	%	biodegradation after 28 d.; after 40 days	closed bottle test (OECD 301 D)	Al-Ahmad et al, 1999
phenylpropanolamine	biodegradation	readily biodegradable after acclimatization		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
pivampicillin	biodegradation	48% biodegrad		sewage treatment	assumed same as penicillin	Richardson and Bowron, 1985
pivmecillinam	biodegradation	not readily biodegradable		28-d BOD test (data for mecillinam)	Oxytop system; OECD method	Halling-Sorensen et al, 2000
	biodegradation	0.5-0.7	d	half-life in activated sludge (data for mecillinam)	biodeg followed over time in 11 sludge in aerated batch reactor; analysis by HPLC	Halling-Sorensen et al, 2000
	Kd sludge-water	55		sorption to sludge (mecillinam data)		Halling-Sorensen et al, 2000
	log Kow	0.79		calculated ACD logP (data for mecillinam)		Halling-Sorensen et al, 2000
propanolol	STP removal efficiency	96	%	STP removal efficiency		Temes, 1998; Cited in Daughton and Temes, 1999
quinolone antibiotics	sorption	strongly adsorbs to soil				Burhenne et al, 1997a,b; Cited in Daughton and Temes, 1999
recombinant DNA fermentations	gene transfer	none		E. coli W3100G (pBGH1) carrying gene for BST(bovine somatotropin) in Missouri river water	PCR (polymerase chain reaction)	Bogosian et al, 1993 cited in Kane, 1993
	gene transfer	no true positive	gene probe hybridization technique	E.coli K-12 (pBR322) river, stream, lake water and activated sludge microcosms (init inoc. 10 ⁸) in 3 to 4 weeks		work of Smolin et al. American Cyanamid (unpublished) cited in Kane, 1993
	gene transfer	none	plasmid DNA ampicillin resistance and chromosomal DNA tetracycline resistance	Indigenous streptomycin-resistant E.coli strain and recombinant E.coli strain introduced to mice fed streptomycin	DNA hybridization assays	Yancey et al. 1993 cited in Kane 1993
	survival	none	tetracycline resistance marker	E. coli K-12 BST recombinant in intestinal tracts of antibiotic-treated mice		Yancey et al. 1993 cited in Kane 1993
	survival	none	tetracycline resistance marker	E. coli K-12 BST recombinant in intestine of rats or mice		Muth et al. 1993 cited in Kane, 1993
	survival	none		E. coli W3100G (pBGH1) in semi-continuous activated sludge microcosms		Heitkamp et al. 1993 cited in Kane, 1993
	survival	decrease of 107	CFU per gram	E.coli K-12 (pBR322) river, stream, lake water and activated sludge microcosms (init inoc. 10 ⁸) in 3 to 4 weeks		work of Smolin et al. American Cyanamid (unpublished) cited in Kane, 1993
	survival	decrease of 105	CFU per gram	E.coli K-12 (pBR322) soil microcosms (2g soil, 60% moisture) for 6 to 8 weeks	standard aerobic plate counts	work of Smolin et al. American Cyanamid (unpublished) cited in Kane, 1993
salicylic acid	biodegradation	94	%		OECD 301F	Henschel et al, 1997

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
salicylic acid	biodegradation	94	%	STP removal efficiency mineralization in soil	OECD 301F	Henschel et al, 1997
	log Kow	2.24			calculated	Henschel et al, 1997
	log Kow	2.24			calculated	Henschel et al, 1997
	STP removal efficiency	efficient removal			STP removal efficiency	Ternes, 1998; Cited in Daughton and Ternes, 1999
saraflloxacin	STP removal efficiency	efficient removal		STP removal efficiency	STP removal efficiency	Ternes, 1998; Cited in Daughton and Ternes, 1999
	biodegradation	<1	%	mineralization in soil marine sediment	closed bottle test (OECD 301 D)	Marengo et al, 1997; Cited in Halling-Sorensen et al, 2000
	sorption	adsorbs				Hektoen et al, 1995; Cited in Halling-Sorensen et al, 2000
streptomycin	sorption	100	%	adsorption to clay in feces (5%)/soil mix		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
sulfadimidine	biodegradation	reactivated to parent		liquid manure		Berger et al, 1986; Cited in Halling-Sorensen et al, 2000
sulfamethoxazole	biodegradability	0;0	%	biodegradation after 28 d ; after 40 days	UK Dept of Environment (1981); King (1981)	Al-Ahmed et al, 1999
	biodegradation	not biodegradable		sewage treatment		Richardson and Bowron, 1985
sulfasalazine	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
sulfatrimethoprim	biodegradation	75	% undegraded	water after 1'y		van Gool, 1993; Cited in Halling-Sorensen et al, 2000
TEA	air	0	%	partitioning to air	fugacity modelling	Davis and Carpenter, 1997
	biodegradability	6.2 to 69	%	biodegraded by sewage inoculum:20 days	BOD tests	Lamb and Jenkins, 1952 and Price et al 1974 cited in Davis and Carpenter, 1997
	Koc	2.63				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	log BCF	-1.57				Lyman et al, 1982 cited in Davis and Carpenter, 1997
terbutaline	log Kow	-1.75				Medicinal Chemistry Project, 1989 cited in Davis and Carpenter, 1997
	sediment	0	%	partitioning to sediment	fugacity modelling	Davis and Carpenter, 1997
	soil	0	%	partitioning to soil	fugacity modelling	Davis and Carpenter, 1997
	water	100	%	partitioning to water	fugacity modelling	Davis and Carpenter, 1997
terbutaline	Kd (soil)	0.4	/kg	calculated from Kow		Stuer-Lauridsen et al, 2000
	log Kow	0.48		calculated		Advanced Chemistry Development, 1995; Cited in Stuer-Lauridsen et al, 2000
tetracycline	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
tetracycline	photodegradation	7 metabolites found		in water under fish pond conditions		Oka et al, 1989; Cited In Halling-Sorensen et al, 2000
theobromine	biodegradation	readily biodegradable after acclimatization		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
theophylline	biodegradation	readily biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
tolbutamide	biodegradation	not biodegradable		sewage treatment	UK Dept of Environment (1981); King (1981)	Richardson and Bowron, 1985
trimethoprim	biodegradation	not readily biodegradable		28 d BOD test	Oxytop system; OECD method	Halling-Sorensen et al, 2000
	biodegradation	22-41	d	half-life in activated sludge	biodeg followed over time in 1l sludge in aerated batch reactor; analysis by HPLC	Halling-Sorensen et al, 2000
	Kd sludge-water	76		sorption to sludge		Halling-Sorensen et al, 2000
	log Kow	1.33		calculated ACD logP		Halling-Sorensen et al, 2000
	log Kow	0.91		measured Syracuse Research		www.est.syrres.com/interkow/estsoft.htm ; Cited in Halling-Sorensen et al, 2000
tylosin	biodegradation	biodegradable		feces (5%)/soil mix; 20C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation			feces (5%)/soil mix; 30C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	biodegradation	40	% unchanged	feces (5%)/soil mix; 4C		Gavalchin and Katz, 1994; Cited in Halling-Sorensen et al, 2000
	soil sorption	sorbed		sorption correlates with clay content; not detected in leachate		Rabolle and Spiliard, 2000

Table 9: Summary of Environmental Concentrations

Table 9: Summary of Environmental Concentration Data

chemical	descriptor	value	units	test matrix	method/parameters	country	reference
[S,S]-EDDS	PEC soil local	0.26	ug/l	formulation	EUSES	Europe	Jaworska et al, 1999
	PEC soil local	0.13	ug/l	private use	HAZCHEM	Europe	Jaworska et al, 1999
	PEC soil local	0.53	ug/l	private use	EUSES	Europe	Jaworska et al, 1999
	PEC soil local	1.67	ug/l	production	EUSES	Europe	Jaworska et al, 1999
	PEC soil regional	2.02E-03	ug/l		HAZCHEM	Europe	Jaworska et al, 1999
	PEC soil regional	4.96E0-3	ug/l		EUSES	Europe	Jaworska et al, 1999
	PEC surf water local	1.51	ug/l	formulation	EUSES	Europe	Jaworska et al, 1999
	PEC surf water local	3.16	ug/l	private use	EUSES	Europe	Jaworska et al, 1999
	PEC surf water local	0.39	ug/l	private use	HAZCHEM	Europe	Jaworska et al, 1999
	PEC surf water local	4.53	ug/l	production	EUSES	Europe	Jaworska et al, 1999
	PEC surf water regional	0.41	ug/l		EUSES	Europe	Jaworska et al, 1999
	PEC surf water regional	0.0134	ug/l		HAZCHEM	Europe	Jaworska et al, 1999
16a-hydroxyestrone	sewage effluent		ug/l	sewage effluent	solid phase extraction GC/MS/MS	Canada	Temes, Stumpf, Muller, et al. 1999
	sewage effluent	max 0.005	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Germany	Temes, Stumpf, Muller, et al. 1999
2,4,6-tribromophenol	sewage effluent	max 0.077	ug/l	max value sewage effluent n= 33 from 33 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	max 0.052	ug/l	conc in 16 rivers and streams n=31	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	0.008-0.052	ug/l	river water	GC/MS	Germany	Temes et al. 1998
	waste water	max 0.077	ug/l	STP discharges	GC/MS	Germany	Temes et al. 1998
2-amino musk ketone (musk:nitro metabolite)	biota	10;16	ug/kg lipid	bream (lipid 1.2-1.7%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	20-25	ug/kg lipid	eel (lipid 16-18%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
2-amino musk ketone (musk nitro metabolite)	biota	270	ug/kg lipid	mussels (lipid 1.4%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	biota	<3-21	ug/kg lipid	pike-perch (lipid 0.3-0.7%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	biota	<1	ug/kg lipid	rainbow trout (lipid 2.3%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	biota	<1 -23	ug/kg lipid	rainbow trout (lipid 2.4-4.2%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	biota	not analysed	ug/kg lipid	rainbow trout (lipid 3.9%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	biota	<1 - 180	ug/kg lipid	rudd, tench, carp (lipid 0.6-3.5%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	surface water	detected		river		Germany	Gatermann et al. 1998; Cited in Daughton and Temes, 1999
	surface water	7	ng/l	river water (Elbe) n=1	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in: Rimkus et al. 1999
	waste water	15-20	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in: Rimkus et al. 1999
	waste water	250	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in: Rimkus et al. 1999
	waste water	9	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in: Rimkus et al. 1999
	waste water	<1	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in: Rimkus et al. 1999
	waste water effluent	250	ng/l	waste water effluent		Germany	Gatermann et al. 1998; Cited in Daughton and Temes, 1999
	waste water influent	bdl		waste water influent		Germany	Gatermann et al. 1998; Cited in Daughton and Temes, 1999
2-amino musk xylene (musk nitro metabolite)	biota	4-14	ug/kg lipid	bream (lipid 1.2-1.7%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999
	biota	4-5	ug/kg lipid	eel (lipid 16-18%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in: Rimkus et al. 1999

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
2-amino musk xylene (musk nitro metabolite)	biota	77	ug/kg/lipid	mussels (lipid 1.4%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	<3.-28	ug/kg lipid	pike-perch (lipid 0.3-0.7%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	3	ug/kg/lipid	rainbow trout (lipid 2.3%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	<1-23	ug/kg/lipid	rainbow trout (lipid 2.4 -4.2%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	<2	ug/kg lipid	rainbow trout (lipid 3.9%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	<2-100	ug/kg lipid	rudd, tench, carp (lipid 0.6-3.5%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	sediment	<100	ng/kg	sediment -river Elbe n=1		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
	sediment	3.54	ng/kg	sediment -river Elbe n=3		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
	sediment	na	ng/kg	sediment -sewage pond n=2		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
	surface water	detected		river		Germany	Gatermann et al. 1998; Cited in Daughton and Temes, 1999
	surface water	<0.5-1	ng/l	river water (Elbe)	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	10	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	72	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	<1	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	<3	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	<1	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
2-amino musk xylene (musk nitro metabolite)	waste water effluent	10	ng/l	waste water effluent		Germany	Gatermann et al, 1998; Cited in Daughton and Temes, 1999
	waste water influent	bdl		waste water influent		Germany	Gatermann et al, 1998; Cited in Daughton and Temes, 1999
4-amino musk xylene (musk nitro metabolite)	biota	80-310	ug/kg lipid	bream (lipid 1.2-1.7%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	55-60	ug/kg lipid	eel (lipid 16-18%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	1550	ug/kg lipid	mussels (lipid 1.4%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	16-410	ug/kg lipid	pike-perch (lipid 0.3-0.7%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	100	ug/kg lipid	rainbow trout (lipid 2.3%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	40-205	ug/kg lipid	rainbow trout (lipid 2.4 -4.2%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	40	ug/kg lipid	rainbow trout (lipid 3.9%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
	biota	266-3600	ug/kg lipid	rudd, tench, carp (lipid 0.6-3.5%)			Gatermann et al, 1999a; Rimkus et al, 1999b- cited in Rimkus et al. 1999
sediment		122	ng/kg	sediment -river Elbe n=1		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
sediment		80-127	ng/kg	sediment -river Elbe n=3		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
sediment		1300;6300	ng/kg	sediment -sewage pond n=2		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
surface water	detected			river		Germany	Gatermann et al, 1998; Cited in Daughton and Temes, 1999
surface water	1-9	ng/l		river water (Elbe)	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
4-amino musk xylene (musk nitro metabolite)	waste water	<1	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rinkus et al. 1999
	waste water	34	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rinkus et al. 1999
	waste water	<1	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rinkus et al. 1999
	waste water	10	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rinkus et al. 1999
	waste water	7-15	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rinkus et al. 1999
	waste water effluent	34	ng/l	waste water effluent		Germany	Gatermann et al. 1998; Cited in Daughton and Temes, 1999
	waste water influent	bdl		waste water influent		Germany	Gatermann et al. 1998; Cited in Daughton and Temes, 1999
4-chloroxylenol	sewage effluent	max 0.080	ug/l	max value sewage effluent n= 82 from 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	max 0.008	ug/l	conc in 16 rivers and streams n=31	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
4-nonylphenol	final effluent	<0.02 to 13	ug/l	final effluent of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	raw sewage	0.89 to 155	ug/l	raw sewage of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	sludge	8.4 to 850	ug/g dry weight	sludge of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	waste water	840	ng/l	sewage treatment effluent	GC/MS	Sweden	Larsson et al. 1999
4-tert-octylphenol	final effluent	<0.005 to 0.37	ug/l	final effluent of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	raw sewage	<0.005 to 21	ug/l	raw sewage of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	sludge	<0.010 to 20	ug/g dry weight	sludge of 16 wastewater treatment plants		Canada	Bennie et al. 1998
5,5-diallylbarbituric acid	ground water	0.2	mg/ml (max)	ground water down gradient of landfill		Denmark	Holm et al. 1995; Cited in Helling-Sorensen et al. 1998
acetaminophen	PEC	14.08	mg/l	surface water - 0% removal rate	EU method	Germany	Henschel et al. 1997
	PEC	0.70	mg/l	surface water - 95% removal rate	EU method	Germany	Henschel et al. 1997
	sewage effluent	<0.02	ug/l	average conc. In sewage effluent of an STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	sewage influent	26	ug/l	average conc. In sewage influent of an STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
acetaminophen	surface water	< 0.05	ug/l	surface water		Germany	Temes, 1998
	waste water	<0.2	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	26 +/- 7	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	< 0.5	ug/l (min)	POTW		Germany	Temes, 1998
	waste water effluent	6.0	ug/l (max)	POTW effluent		Germany	Temes, 1998
AMA (musk nitro metabolite)	sewage sludge	nd	ug/kg dry mass	sewage sludge of different catchment areas n= 10	HRGC:ion trap MS/MS	Switzerland	Berset et al. 2000
AMK (musk nitro metabolite)	sewage sludge	13.1	ug/g dry weight	detected in one sewage sludge sample only n=10	HRGC ion trap MS/MS	Switzerland	Berset et al. 2000
AMM (musk nitro metabolite)	sewage sludge	nd to 36.2	ug/g dry weight	sewage sludge of different catchment areas n= 10; detected in 5 sludges	HRGC ion trap MS/MS	Switzerland	Berset et al. 2000
AMT (musk nitro metabolite)	sewage sludge	nd	ug/g dry weight	sewage sludge of different catchment areas n= 10	HRGC ion trap MS/MS	Switzerland	Berset et al. 2000
AMUXY (musk nitro metabolite)	sewage sludge	nd to 49.1	ug/kg dry mass	sewage sludge of different catchment areas n= 10	HRGC ion trap MS/MS	Switzerland	Berset et al. 2000
androsterone	waste water	5.7 -14.04	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave:8.92	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	1.74 - 7.72	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 1.82	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
antipyrine	surface water	0.95	ug/l (max)	surface water		Germany	Temes, 1998
	waste water effluent	0.41	ug/l.(max)	waste water effluent		Germany	Temes, 1998
ASA	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	sewage effluent	ave 0.5	ug/l	average conc. In sewage effluent of an STP	solid phase extraction, GC/MS analysis.	Germany	Temes, Stumpf et al. 1998
	sewage effluent	max 1.5	ug/l	sewage effluent 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	sewage influent	3.2	ug/l	average conc. in sewage influent of an STP	solid phase extraction, GC/MS analysis.	Germany	Temes, Stumpf et al. 1998
	surface water	<0.5	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	nd				Germany	Stumpf et al. 1996 cited in Stan and Heberer, 1997
	surface water	0.34	ug/l (max)	rivers and streams		Germany	Temes, 1998

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
ASA	waste water	<0.05 - 1.51	ug/l			Germany	Stumpf et al. 1996 cited in Stan and Heberer, 1997
	waste water	0.29	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water	nd - 95.62	ug/l			Germany	Hignite and Azornoff, 1977 cited in Stan and Heberer, 1997
	waste water	0.5 + 0.03	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	3.2 + 0.3	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water effluent	1	ug/l				Richardson and Bowron, 1985; Cited In Stuer-Lauridsen et al, 2000
	waste water effluent	~1	ug/l	waste water effluent	GC/MS	England	Richardson and Bowron, 1985
	waste water effluent	1.51	ug/l (max)	effluent from sedimentation tank		Germany	Stumpf et al, 1996; Cited in Stuer-Lauridsen et al, 2000
	waste water effluent	1.5	ug/l (max)	STP effluent		Germany	Temes, 1998
	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
benzaldehyde	raw sewage	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
benzoic acid	surface water	<0.003 - 0.028				Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
betaxolol	surface water	<0.003 - 0.028	ug/l	surface water	GC/MS	Germany	Hirsch et al, 1998
	waste water	<0.025 - 0.19	ug/l			Germany	Hirsch et al. 1998 cited in Stan and Heberer, 1997
	waste water effluent	<0.025 - 0.188	ug/l	waste water effluent	GC/MS	Germany	Hirsch et al, 1996
	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	sewage effluent	detected in 3/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999.		Canada	Metcalfe et al, 2000
	sewage influent	detected in 8/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	0.38	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
bezafibrate	surface water	<0.005 - 0.380	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
bezafibrate	surface water	max 210	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	max 75	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	3.1	ug/l (max)	surface water		Germany	Temes, 1998
	surface water	<0.025	ug/l	Paraiba do Sol river	SPE:GC/MS	Rio de Janeiro	Stumpf, Temes et al. 1999
	waste water	3.32	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water	<0.25 - 4.56	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water effluent	4.6	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	1.2	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
biphenyol	sewage effluent	max 2.6	ug/l	max value sewage effluent n= 82 from 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	max 0.25	ug/l	16 rivers n=31	GC/MS	Germany	Temes et al. 1998
	surface water	max 0.25	ug/l	conc in 16 rivers and streams n=31	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	waste water influent	2.6	ug/l (max)	waste water influent		Germany	Temes et al, 1998
bisoprolol	surface water	<0.003 - 0.124	ug/l	river water	GC/MS	Germany	Hirsch et al. 1996
	waste water	<0.025 - 0.37	ug/l	wastewater	GC/MS	Germany	Hirsch et al. 1996
bisphenol	waste water	490	ng/l	sewage treatment effluent	GC/MS	Sweden	Larsson et al. 1999
bleomycin	drinking water	5-13	ng/l	drinking water; mean 8.7 + 3.3	radioimmunoassay		Aherne et al, 1990
	surface water	<5-17	ng/l	; mean 8.5+ 3.7 ng/l	radioimmunoassay	England n=1	Aherne et al, 1990
	waste water effluent	11-19	ng/l	waste water effluent; mean 15.8+ 3 ng/l	radioimmunoassay	England n=9	Aherne et al, 1990
bromophene	sewage effluent	<0.02	ug/l	max value sewage effluent n= 82 from 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	<0.005	ug/l	16 rivers n=31	GC/MS	Germany	Temes et al. 1998
	surface water	<0.005	ug/l	conc in 16 rivers and streams n=31	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	waste water	<0.02	ug/l	STP discharges.	GC/MS	Germany	Temes et al. 1998
caffeine	drinking water	~1	ug/l	drinking water	GC/MS	England	Richardson and Bowron, 1985

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
caffeine	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
	waste water effluent	16-292	ug/l	waste water effluent		Canada, Va	Rogers et al, 1986; Cited in Halling-Sorensen et al, 1998
	waste water effluent	~1	ug/l	waste water effluent	GC/MS	England	Richardson and Bowron, 1985
carazol	surface water	<0.003 - 0.124	ug/l	river water	GC/MS	Germany	Hirsch et.al. 1996
	waste water	<0.025 - 0.117	ug/l	waste water	GC/MS	Germany	Hirsch et.al. 1996
carbamazepin	sewage effluent	detected in 18/18		sewage effluent n=18 STPs from 14 municipalities in Canada collected in 1998-1999		Canada	Metcalfe et al, 2000
	sewage influent	detected in 18/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	max 170	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
chloramphenicol	surface water	180 - 700	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	max 2100	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	1.1	ug/l (max)	river, stream	GC/MS	Germany	Temes, 1998
	surface water	0.25	ug/l (med)	river,stream	GCMS	Germany	Temes, 1998
	waste water	2.1	ug/l (med)	wastewater effluent median concentration			Temes. 1998
	waste water	6.3	ug/l (max)	wastewater effluent max conc.		Germany	Temes, 1998
chlomadinone acetate	waste water	ave 0.09	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.04- 0.15	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.03- 0.14	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.08	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
chloramphenicol	ground water	<0.02	ug/l (n=59)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	max 0.56	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	surface water	<0.2-0.06	ug/l (range of 52)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	max 0.06	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	waste water effluent	<0.2-0.56	ug/l (range of 10)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
chlorophene	sewage effluent	max 0.71	ug/l	max value sewage effluent n= 82 from 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	max 0.096	ug/l	conc in 16 rivers and streams n=31		Germany	Temes, Stumpf et al. 1998
	waste water	0.30 +/- 0.11	ug/l	waste water influent average over 6 days		Germany	Temes et al. 1998
	waste water effluent	0.11 +/- 0.02	ug/l	waste water effluent average over 6 days		Germany	Temes et al, 1998
chloroxylenol	surface water	max. 0.008	ug/l	16 rivers n=31	GC/MS	Germany	Temes et al. 1998
	waste water effluent	<0.1 - occasional detection	ug/l	waste water effluent		Germany	Temes et al, 1998; Cited in Daughton and Temes, 1999
	waste water influent	<0.1 - occasional detection	ug/l	waste water influent		Germany	Temes et al, 1998; Cited In Daughton and Temes, 1999
	waste water influent	0.71	ug/l.(max)	waste water influent		Germany	Temes et al, 1998; Cited in Daughton and Temes, 1999
chlortetracycline	ground water	<0.05	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al; 1999
	sewage effluent	<0.05	ug/l	sewage effluent		Germany	Hirsch, Temes, Haberer, et al. 1999
	soil	detected		soil amended with poultry manure			Warman and Thomas, 1981; Cited in Halling-Sorensen et al; 1998
	surface water	<0.05	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
cholesterol	surface water	<0.05	ug/l	rivers		Germany	Hirsch, Temes, Haberer, et al. 1999
	waste water effluent	<0.05	ug/l (n=5)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	waste water	detected not quantified		wastewater		US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
ciprofloxacin	PEC	630	ng/l	calculated based on use data - degrad considered		Europe	Halling-Sorensen et al, 2000
	PECmax	630	ng/l	calculated based on use data		Europe	Halling-Sorensen et al, 2000
	surface water	0.06	ug/l	surface water theoretical concentration			Kummerer et al. 2000
	waste water	2-30	ug/l	hospital wastewater theoretical			Kummerer et al. 2000
	waste water	0.6	ug/l	municipal wastewater theoretical			Kummerer et al. 2000
clarithromycin	ground water	<0.02	ug/l.(n=59)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
clarithromycin	sewage effluent	max 0.24	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	0.15	95th %ile (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.02-0.26	ug/l (range of 33)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	max 0.26	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	0.24	ug/l (n=1)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
clenbuterol	surface water	<5	ng/l	river water	GC/MS	Germany	Hirsch et al. 1996
	surface water	0.05	ug/l (max)	surface water		Germany	Ternes, 1998; Cited in Daughton and Ternes, 1999
	waste water	<0.025 - 0.18	ug/l	wastewater	GC/MS	Germany	Hirsch et al. 1996
	waste water effluent	0.08	ug/l.(max)	waste water effluent		Germany	Ternes, 1998; Cited in Daughton and Ternes, 1999
clofibrate	drinking water	10-165	ng/l	drinking water n=64	GC/MS	Germany	Stan et.al. 1994; Heberer and Stan 1995; Cited in Henschel et al. 1997
	river water	~40	ng/l	river water	GC/MS	England	Richardson and Bowron, 1985
	STP effluent	7.09 (2.54-9.74)	ug/l (mean, range of 7)	STP effluent measured on 7 different days	GC/MS	US, Kansas	Hignite and Azarnoff, 1977
	surface water	<0.5-220	ng/l	river water		Europe	Heberer, 1995; Cited in Halling-Sorensen et al, 1998
	surface water	<0.5-1760	ng/l	river water		Germany	Heberer, 1995; Cited in Halling-Sorensen et al, 1998
	surface water	< 0.03	ug/l	surface water		Germany	Ternes, 1998
	waste water effluent	< 0.1	ug/l	waste water effluent		Germany	Ternes, 1998
	drinking water	10-165	ng/l	drinking water		Germany	Stan et al, 1994
clofibric acid	groundwater	70 -7300	ug/l	groundwater wells of drinking water plant; derivative of clofibric acid		Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
	Leitungswasser	7 - 165	ng/l	Leitungswassers aus verschiedenen Berliner Bezirken - 3 sampling dates in July 1993 for 22 Bezirk	GC/MS		Stan et.al. 1994
	PEC	0.19	mg/l	surface water - 0% removal rate	EU method	Germany	Henschel et al, 1997
	PEC	0.01	mg/l	surface water - 95% removal rate	EU method	Germany	Henschel et al, 1997

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clofibric acid	-sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	-sewage effluent	n.d.		sewage effluent n= 18:STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al., 2000
	sewage influent	detected in 0/18		sewage influent n=18 samples collected in 14 Canadian STPs-STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al; 2000
	STP discharge	2.13 (0.76-2.92)	kg/d (mean, range of 7)	discharge amount measured on 7 different days	GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	STP intake amount	2.8	kg/d		GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	surface water	1-2.4	ng/l	waters of whole German Bight	GC/MS analysis		Buser et al. 1998a
	surface water	19-222	ng/l	Flusswasser ausserhalb Berlin	GC/MS		Stan et al. 1994
	surface water	27 to 157	ng/l	surface water Elbe and other rivers	GC/MS analysis		Herberer et al. 1995 cited in Buser et al. 1998a
	surface water	0.5 to 7.8	ng/L	surface water from North Sea	GC/MS analysis		Buser et al. 1998a
	surface water	<1 to 9	ng/l	surface waters of four Swiss lakes	GC/MS analysis		Buser et al. 1998a
	surface water	<0.001 - 0.30	ug/L			Germany	Kolbfus. 1995 cited in Stan and Heberer, 1997.
	surface water	0.14 - 0.18	ug/L			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	<0.005 to 0.18	ug/L			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	surface water	<0.001 - 1.25	ug/l			Germany	Heberer, 1995, Heberer and Stan, 1995 cited in Stan and Heberer, 1997
	surface water	max 200	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	19-222	ng/l	river water		Germany	Henschel et al., 1997
	surface water	max 140	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	7.8	ng/l (max)	sea water		North Sea	Buser, Muller et al, 1998; Cited in Daughton and Temes, 1999
	surface water	<0.01 to 0.03	ug/l:	Paraiba do Sol river	SPE GC/MS	Rio de Janeiro	Stumpf, Temes et.al. 1999
	surface water	1-9	ng/l	rivers and lakes		Switzerland	Buser, Muller et al, 1998; Cited in Daughton and Temes, 1999

chemical	descriptor	value	units	test matrix	method/parameters	country	reference
clofibric acid	surface water	0.55	ug/l (max)	surface water		Switzerland	Buser, Müller et al, 1998; Cited in Daughton and Ternes, 1999
	waste water	up to 4.55	ug/l				Heberer, 1995, Heberer and Stan, 1995 cited in Stan and Heberer, 1997
	waste water	0.25 - 2.5	ug/l			Germany	Heberer, 1995, Heberer and Stan, 1995 cited in Stan and Heberer, 1997
	waste water	<0.05 - 1.56	ug/L			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water	0.46 - 1.03	ug/L			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water effluent	1.6	ug/l (max)	waste water effluent		Switzerland	Buser, Müller et al, 1998; Cited in Daughton and Ternes, 1999
	waste water effluent	0.1-2	ug/l	wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Ternes, 1999
	waste water influent	1	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Ternes, 1999
	waster water effluent	7.09 (2.54-9.71)	ug/l (mean, range of 7)	conc in effluent measured on 7 different days	GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	groundwater	(50 - 2900)	ug/l	groundwater wells of drinking water plant		Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
clofibric acid derivative	surface water	detected not quantified				Germany	Stan and Herberer, 1997
	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
cloxacillin	surface water	<0.02	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	raw sewage	19-4500	ng/l	hospital sewage		Germany	Steger-Hartmann et al, 1997; Cited in Daughton and Ternes, 1999
cyclophosphamide	sewage effluent	detected in 0/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999		Canada	Metcalfe et al, 2000
	sewage influent	detected in 0/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	< 0.01	ug/l	surface water		Germany	Ternes, 1998

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cyclophosphamide	waste water effluent	146	ng/l	treated hospital effluent from STP			Steger-Hartmann et al, 1998; Cited in Helling-Sorensen et al, 1998
	waste water effluent	0.02	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water effluent	17	ng/l (max)	waste water effluent - from hospital		Germany	Steger-Hartmann et al, 1997; Cited in Daughton and Temes, 1999
	waste water influent	143	ng/l (max)	waste water influent - from hospital		Germany	Steger-Hartmann et al, 1997; Cited in Daughton and Temes, 1999
dehydroisoandrosterone	waste water	0.58 - 2.17	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 1.29	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.20 - 1.17	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.54	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
dextropropoxyphene	river water	~1	ug/l	river water	GC/MS	England	Richardson and Bowron, 1985
diatzoate	surface water	0.23	ug/l (median)	surface water		Germany	Temes and Hirsch, 2000b; Cited in Daughton and Temes, 1999
	surface water	~100	ug/l	surface water rivers, creeks		Germany	Temes and Hirsch, 2000b
diazepam	drinking water	10	ng/l	drinking water			Waggot, 1981; Cited in Helling- Sorensen et al, 1998
	drinking water	0.01	ug/l	drinking water			Helling-Sorensen et al, 1998
	drinking water	~10	ng/l	waste water effluent	GC/MS	England	Richardson and Bowron, 1985
	ground water	10-40	ug/l			USA, Atlantic	Genicola, 1999 - pers commun; Cited in Daughton and Temes, 1999
	surface water	0.01	ug/l	river			Halling-Sorensen et al, 1998
	surface water	10	ng/l	river water			Waggot, 1981; Cited in Helling- Sorensen et al, 1998
	surface water	~40	ng/l	waste water effluent	GC/MS	England	Richardson and Bowron, 1985
	surface water	< 0.03	ug/l	river water	GC/MS	Germany	Temes, 1998
	surface water	<0.03	ug/l	rivers and streams		Germany	Temes, 1998; Cited in Stuer- Lauridsen et al, 2000
	waste water effluent	<1	ug/l	sewage effluent			Halling-Sorensen et al, 1998

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
diazepam	waste water effluent	<1	ug/l	waste water effluent			Waggot, 1981; Cited in Halling-Sørensen et al, 1998
	waste water effluent	<1	ug/l	waste water effluent	GC/MS	England	Richardson and Bowron, 1985
	waste water effluent	0.04	ug/l (max)			Germany	Temes, 1998; Cited in Daughton and Temes, 1999
	waste water effluent	0.04	ug/l (max)	effluent from sedimentation tank		Germany	Temes, 1998; Cited in Stuer-Lauridsen et al, 2000
diclofenac	groundwater	nd - 380	ug/l			Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
	sediment	not detected < 10	ng/g	Greifensee lake sediment	GC/MS	Switzerland	Buser et al. 1998b
	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	sewage effluent	n.d.		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage effluent	detected in 0/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage influent	detected in 1/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	<0.001-0.96	ug/l			Germany	Stan and Herberer, 1997
	surface water	<0.005 - 0.489	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	surface water	0.09	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	max 300	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	max 420	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	<0.01 to 0.06	ug/l	Paraiba do Sol river	SPE GC/MS	Rio de Janeiro	Stumpf, Temes et al. 1999
	surface water	11-370	ng/l	surface water Aabach River inflow to Lake Greifensee	GC/MS analyzed as methyl ester	Switzerland	Buser, Poiger et al, 1998; Cited in Daughton and Temes, 1999
	surface water	1-12	ng/l	surface water outflow of Swiss lakes	GC/MS analyzed as methyl ester	Switzerland	Buser et al. 1998b

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
diclofenac	waste water	1	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water	>0.05 - 1.59	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water effluent	310-930	ng/l	waste water effluent	GC/MS analyzed as methyl ester	Switzerland	Buser, Poiger et al, 1998; Cited in Daughton and Ternes, 1999
	waste water influent	0.8	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Ternes, 1999
	waste water influent	470-1920	ng/l	waste water influent	GC/MS analyzed as methyl ester	Switzerland	Buser, Poiger et.al, 1998; Cited in Daughton and Ternes, 1999
dicloxacillin	ground water	<0.02	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	<0.02	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.02	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	<0.02	ug/l (n=4)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
dimethylsterone	waste water	0.05	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.01 - 0.08	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.04	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.01 - 0.07	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
doxycycline	ground water	<0.05	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.05	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	<0.05	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.05	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	<0.05	ug/l (n=5)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
DPTA	surface water	9-18	ug/l	lake near a pulp mill		Finland	Sillanpaa and Oikari, 1996; Sillanpaa, 1997
	surface water	2-15	ug/l	river		Germany	Wanke and Eberle, 1992; Cited in Sillanpaa, 1997
EDTA	surface water	14-1120	ug/l	river	GC	England	Gardiner, 1978; Cited in Sillanpaa, 1997

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
EDTA	surface water	1.7-44.0	ug/l	lake	GC	Finland	Sillanpaa and Oikan, 1996; Sillanpaa, 1997
	surface water	2.9	ug/l	lake	DPASV	Germany	Voulgaropoulos et al, 1984; Cited in Sillanpaa, 1997
	surface water	9.1-28.8	ug/l	river	GC	Germany	Brauch abd Schulterer, 1987; Cited in Sillanpaa, 1997
	surface water	10-80	ug/l	river	GC	Germany	Nusch et al, 1991; Cited in Sillanpaa, 1997
	surface water	7-104	ug/l	river		Germany	Trapp et al, 1992; Cited in Sillanpaa, 1997
	surface water	1.6-13.5	ug/l	river	GC	Germany	Wanke and Eberle, 1992; Cited in Sillanpaa, 1997
	surface water	2.0-25	ug/l	river	GC	Germany	Pletsch et al, 1995; Wanke and Eberle, 1992; Cited in Sillanpaa, 1997
	surface water	3.4-22.2	ug/l	rivers	DPASV	Germany	Voulgaropoulos et al, 1984; Cited in Sillanpaa, 1997
	surface water	5.0-60	ug/l	rivers	GC	Germany	Frimmel et al, 1989; Cited in Sillanpaa, 1997
	surface water	0.52	ug/l	lake	DPASV	Greece	Voulgaropoulos et al, 1984; Cited in Sillanpaa, 1997
	surface water	5.85	ug/l	sea	DPASV	Greece	Voulgaropoulos et al, 1984; Cited in Sillanpaa, 1997
	surface water	900	ug/l	river	PSA	Jordan	Fayyad et al, 1988; Cited in Sillanpaa, 1997
	surface water	2.6-29.2	ug/l	surface	HPLC	Netherlands	Bergers and de Groot; Wanke and Eberle, 1992; Cited in Sillanpaa, 1997
	surface water	2.0-45	ug/l	rivers	GC	Switzerland	Giger et al, 1991; Cited in Sillanpaa, 1997
erythromycin	ground water	<0.02	ug/l (n=59)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	river water	~1	ug/l	river water	GC/MS	England	Richardson and Bowron, 1985
	sewage effluent	max 6.0	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Terres, Haberer, et al. 1999
	surface water	1	ug/l	river water			Watts et al, 1983; Cited in Halling-Sorensen et al, 1998
	surface water	0.63	ug/l 95th %ile (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999

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erythromycin	surface water	0.15 (<0.02-1.7)	ug/l (median, range of 52)	rivers	HPLC/ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	max 1.7	ug/l		HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	5.1	ug/l (90th %ile of 10)		HPLC/ESI-MS/MS	Germany	Hirsch et al, 1999
	waste water effluent	2.5 (<0.02-6.0)	ug/l (median, range of 10)		HPLC/ESI-MS/MS	Germany	Hirsch et al, 1999
estradiol	drinking water	<5	ng/l	drinking water		England	Aherne and English; Cited in Richardson and Bowron, 1985
	sewage effluent	40	ng/l	final sewage effluent		UK	Desbrow et al. 1996 cited in Arcand-hoy et al. 1998
	surface water - EIC	14.2	ng/l	calculated expected introduction concentration US		US	Arcand-hoy et al. 1998
	surface water - EIC	Not Available	ng/l	calculated expected introduction concentration US		US	Arcand-hoy et al. 1998
	waste water	1.1	ng/l	sewage treatment effluent		Sweden	Larsson et al. 1999
	waste water	10-100	ng/l	raw sewage		UK	Environmental Agency, 1996
	waste water	0.00 - 0.02	ug/l	TLC/GLC	USA	Tabak et al. 1981	
	waste water	ave 0.01	ug/l	TLC/GLC	USA	Tabak et al. 1981	
	waste water	ave 0.01	ug/l	TLC/GLC	USA	Tabak et al. 1981	
	waste water	0.00 -0.02	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
estradiol -17B	sewage effluent	max 0.064	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Canada	Ternes, Stumpf, Muller, et al. 1999
	sewage effluent	max 0.003	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Germany	Ternes, Stumpf, Muller, et al. 1999
	sewage effluent	0.015	ug/l	sewage effluent of municipal STP	GC/MS/MS	Germany	Ternes, Stumpf, Muller, et al. 1999
	sewage effluent	<0.6 to 12	ng/l	sewage effluent n=5	HPLC GC/MS/MS	Netherlands	Belfroid et al. 1999
	surface water	<0.0005	ug/l	rivers and streams 15	solid phase extraction GC/MS/MS	Germany	Ternes, Stumpf, Muller, et al. 1999
	surface water	<0.3 to 5.5	ng/l	rivers and canals 11	HPLC GC/MS/MS	Netherlands	Belfroid et al. 1999
	waste water	1.9	ng/l	wastewater effluent median concentration			Huang and Sedlak, 2000 cited in Sedlak, 2000

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estradiol valerate	sewage effluent	<0.004	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Canada	Temes, Stumpf, Muller, et al. 1999
	sewage effluent	<0.004	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Germany	Temes, Stumpf, Muller, et al. 1999
	surface water	<0.002	ug/l	rivers and streams 15	solid phase extraction GC/MS/MS	Germany	Temes, Stumpf, Muller, et al. 1999
estriol	waste water	ave 0.08	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.01 - 0.20	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.04	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.00 - 0.14	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
estrogen	feces	detected		chicken manure			Shore et al. 1988; Cited in Halling-Sorensen et al. 1998
	manure of 7wk old broilers	66	ng/g	manure of 7wk old broilers, Chesapeake bay area		US	Shore and Hall, 1997 cited in Arcand-hoy et al. 1998
	raw sewage	48-54	ng/l	raw sewage, Chesapeake bay area		US	Shore and Hall, 1996 cited in Arcan-hoy et al. 1998
	sewage effluent	0.8 - 2.1	ng/l	sewage effluent, Chesapeake bay area		US	Shore and Hall, 1996 cited in Arcan-hoy et al. 1998
	surface water	0.8 to 10.4	ng/l	small streams n=4, Chesapeake bay area		US	Shore and Hall, 1996 cited in Arcan-hoy et al. 1998
	surface water run-off	19	ng/l	run-off from soya filled fertilized with chicken manure		US	Shore and Hall 1997 cited in Arcand-hoy et al. 1998
	urine	10	umol/d	daily amount excreted in urine of pregnant women			Fostis, 1987; Cited in Halling-Sorensen et al. 1998
	waste water	.30 to 60	ng/l	expected concentration of estrogenic hormones in wastewater influent			Sedlak et al. 2000
	waste water effluent	detected					Shore et al, 1992; Cited in Halling-Sorensen et al. 1998
	waste water influent	0.054-0.13	ug/l (max)	raw sewage		Israel	Halling-Sorensen et al. 1998
estrogens (conjugated)	surface water - EIC	41.5	ng/l	calculated expected introduction concentration US	prescribed use/4.07 x 1013 litres/y (water entering POTW, 1992.EPA data)	US	Arcand-hoy et al. 1998
	surface water - EIC	36.9	ng/l	calculated expected introduction concentration US	1995 retail sales/influent	US	Arcand-hoy et al. 1998
estrone	sewage effluent	max:0.048	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Canada	Temes, Stumpf, Muller, et al. 1999

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estrone	sewage effluent	max 70	ng/l	sewage effluent	GC/MS/MS	Germany	Ternes, Stumpf, Muller, et.al. 1999
	sewage effluent	0.027	ug/l	sewage effluent of municipal STP	GC/MS/MS	Germany	Ternes, Stumpf, Muller, et.al. 1999
	sewage effluent	<0.4 to 47	ng/l	sewage effluent n=5	HPLC GC/MS/MS	Netherlands	Belfroid et.al. 1999
	sewage effluent	40	ng/l	final sewage effluent		UK	Desbrow et al. 1996 cited in Arcand-hoy et al. 1998
	surface water	max 1.6	ng/l	rivers and streams 15	GC/MS/MS	Germany	Ternes, Stumpf, Muller, et.al. 1999
	surface water	max 1.6	ng/l	rivers and streams 15	solid phase extraction GC/MS/MS	Germany	Ternes, Stumpf, Muller, et.al. 1999
	surface water	<0.1 to 3.4	ng/l	rivers and canals 11	HPLC GC/MS/MS	Netherlands	Belfroid et al. 1999
	waste water	5.8	ng/l	sewage treatment effluent	GC/MS	Sweden	Larsson et al. 1999
	waste water	10-100	ng/l			UK	Environmental Agency, 1996
	waste water	ave 0.03	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.00 - 07	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.00 - 0.04	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.02	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
ethinyl estradiol	drinking water	<5	ng/l	drinking water	immunoassay	UK	Aherne and Briggs, 1989
	raw sewage and effluent 1		ug/l	around several STW		USA	Tabak et al., 1981 cited in Larsson et al., 1999
	sewage effluent	max 0.042	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Canada	Ternes, Stumpf, Muller, et.al. 1999
	sewage effluent	max 0.015	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Germany	Ternes, Stumpf, Muller, et.al. 1999
	sewage effluent	<0.2 to 7.5	ng/l	sewage effluent n=5	HPLC GC/MS/MS	Netherlands	Belfroid et al. 1999
	sewage effluent	0.2 to 7.0	ng/l	measured in sewage effluent		UK	Desbrow et al. 1996 cited in Arcand-hoy et al. 1998
	surface water	<2	ng/l				Kalbfus, 1995; Cited in Halling-Sørensen et.al, 1998
	surface water	<0.0005	ug/l	rivers and streams 15	solid phase extraction GC/MS/MS	Germany	Ternes, Stumpf, Muller, et.al. 1999
	surface water	<0.5	ng/l	surface water		Germany	Ternes, Hirsch et al, 1999; Cited in Daughton and Ternes, 1999

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ethinyl estradiol	surface water	4.3	ng/l (max)	river		Netherlands	Belfroid et al, 1999; Cited in Daughton and Temes, 1999
	surface water	<0.1 to 4.3	ng/l	rivers and canals 11	HPLC GC/MS/MS	Netherlands	Belfroid et al. 1999
	surface water	2-15	ng/l	river water	immunoassay	UK	Aherne and Briggs, 1989
	surface water	1-3	ng/l	water from reservoir	immunoassay	UK	Aherne and Briggs, 1989
	surface water - EIC	0.012	ng/l	calculated expected introduction concentration US	1995 retail sales/influent	US	Arcand-hoy et al. 1998
	surface water - EIC	2.16	ng/l	calculated expected introduction:concentration US	88kg/prescribed use/4.07 x 10E13 litres/d (water entering POTW, 1992 EPA data)	US	Arcand-hoy et al. 1998
	waste water	4.5	ng/l	sewage treatment effluent	GC/MS	Sweden	Larsson et al. 1999
	waste water	ave 1.21	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.5 - 2.25	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.81	ug/l	treated effluent	TLC/GLC	USA	Tabak et.al. 1981
	waste water	0.25 - 1.78	ug/l	treated effluent	TLC/GLC	USA	Tabak et.al. 1981
	waste water effluent	0.3-0.5	ng/l	effluent from sedimentation tank			Kalbfus, 1995; Cited in Halling-Sorensen et al, 1998
	waste water effluent	7	ng/l	waste water effluent			Routledge, Sheahan et al, 1998; Cited In Daughton and Temes, 1999
ethynodiol diacetate	waste water effluent	<17	ng/l	waste water effluent	immunoassay	UK	Aherne and Briggs, 1989
	waste water	0.4 -1.01	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.66	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.28 - 0.96	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
etiocholanolone	waste water	ave 0.66	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 6.1	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	3.15 - 9.05	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.85 - 4.70	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
fatty acids - branched chains	waste water effluent	ave 2.37	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water effluent	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999

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fatty acids - normal chains	waste water effluent	0.3-32	ug/l	wastewater	GC/MS	US	Garrison et al, 1978; Cited in Daughton and Temes, 1999
fatty acids - unsaturated acids	waste water effluent	0.5-7.0		wastewater	GC/MS	US	Garrison et al, 1978; Cited in Daughton and Temes, 1999
fenofibrate	groundwater	nd- 45	ug/l			Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
	surface water	<0.001 - 0.10	ug/l			Germany	Kolbusz, 1995 cited in Stan and Heberer, 1997.
	surface water	< 0.010	ug/l	surface water		Germany	Temes, 1998
	waste water effluent	0.03	ug/l (max)	waste water effluent		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
fenofibric acid	sewage effluent	max 0.8	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	surface water	<0.005 - 0.172	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	surface water	0.05	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	0.28	ug/l (max)	surface water		Germany	Temes, 1998
	waste water	<0.05 - 1.19	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water	0.68	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water effluent	1.2	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	0.4	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
fenoprofen	sewage effluent	detected in 0/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage influent	detected in 9/18		sewage influent n=18 samples collected in 14 Canadian STPs STPs	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	bdl		surface water		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	surface water	<0.05	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	max 42	ng/l	river water	GC/MS	Germany	Sacher et al. 1998

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
fenoprofen	surface water	<5	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	< 0.010	ug/l	surface water		Germany	Temes, 1998
	waste water	<0.05	.ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water effluent	bdl		waste water effluent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	waste water effluent	< 0.050		waste water effluent		Germany	Temes, 1998
fenoterol	surface water	<0.003 - 0.008	ug/l	riverwater n=24	GC/MS	Germany	Hirsch et al. 1996
	surface water	0.061	ug/l (max)	surface water		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
	waste water	<0.025 - 0.067	ug/l	wastewater n=25 WTP		Germany	Hirsch et al. 1996
	waste water effluent	0.06	ug/l (max)	waste water effluent		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
flumequine	PIECsw	0.022	mg/l	surface water near fish farm - continuous treatment; no STP	calculated		Montforts et al, 1999
	PIECsw	11	mg/l	surface water near fish farm - no treatment; no STP	calculated		Montforts et al, 1999
	PIECsw	0.147	mg/l	surface water near fish farm - occasional treatment; no STP	calculated		Montforts et.al, 1999
	waste water	50	ug/l	concentration in wastewater of a sea bass intensive aquaculture station during treatment periods			Migliore et al. 1995b cited in Migliore et al. 2000
gemfibrozil	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	sewage effluent	detected in 1/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999		Canada	Metcalfe et al, 2000
	sewage influent	detected in 3/18		sewage influent n=18 samples collected in 14 Canadian STPs		Canada	Metcalfe et al, 2000
	surface water	<0.005 - 0.19	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	surface water	0.12	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	max 110	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	max 220	ng/l	river water	GC/MS	Germany	Sacher et al. 1998

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gemfibrozil	surface water	0.51	ug/l (max)	surface water		Germany	Temes, 1998
	waste water	1.32	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water	<0.05 - 1.46	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water effluent	1.5	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	0.3	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
gentisic acid	sewage effluent	<0.01	ug/l	average conc. in sewage effluent of an STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	sewage effluent	max 0.59	ug/l	sewage effluent 36 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	sewage influent	4.6	ug/l	average conc. in sewage influent of an STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	1.2	ug/l (max)	surface water		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
	waste water	4.6 + 0.8	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	<0.1	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water effluent	bdl	ug/l	waste water effluent		Germany	Temes et al, 1998; Cited in Daughton and Temes, 1999
	waste water effluent	0.59	ug/l (max)	waste water effluent		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
	waste water influent	4.6	ug/l	waste water influent		Germany	Temes et al, 1998; Cited in Daughton and Temes, 1999
	plants	+		naturally present in leaves, bark buds and fruits of many plants			Devillers et al, 1990
ibuprofen	surface water	<250	ng/l	Mole river		UK	Devillers et al, 1990
	groundwater	nd - 200	ug/l			Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
	river water	17-139	ng/l	river water - several rivers		Germany	Stumpf et al, 1986; Cited in Halling-Sorensen et al, 1998
	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	sewage effluent	detected in 12/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al., 2000

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
ibuprofen	sewage influent	detected in 14/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	0.14	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	<0.005 - 0.280	ug/l			Germany	Stan and Heberer, 1997
	surface water	0.017-0.139	ug/l	river water		Germany	Stumpf et al, 1996; Cited in Stuer-Lauridsen et al, 2000
	surface water	0.006-0.041	ug/l	river water		Germany	Stumpf et al, 1996; Cited in Stuer-Lauridsen et al, 2000
	surface water	<0.005 - 0.139	ug/l	river water		Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	surface water	max 450	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	max 12	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	<5-41	ng/l	river water		Germany	Stumpf et al, 1986; Cited in Halling-Sorensen et al, 1998
	surface water	0.53	ug/l (max)	surface water		Germany	Ternes, 1998
	surface water	<0.01	ug/l	Paraliba do Sul river	SPE GC/MS	Rio de Janeiro	Stumpf, Ternes et al. 1999
	surface water	<0.2 to 7.8	ng/l	lakes and rivers	enantioselective GC/MS analysis of methyl esters	Switzerland	Buser et al. 1999
	surface water	8	ng/l (max)	lakes and streams		Switzerland	Buser, Poiger et al, 1999; Cited in Daughton and Ternes, 1999
	surface water	<0.2	ng/l	North Sea; Sempachsee	enantioselective GC/MS analysis of methyl esters	Switzerland	Buser et al. 1999
	waste water	370	ng/l	wastewater effluent median concentration			Ternes, 1998 cited in Sedlak et al. 2000
	waste water	3.35	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water	<0.05 - 3.35	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water	~2 - 81	ng/l	wastewater effluent	enantioselective GC/MS analysis of methyl esters	Switzerland	Buser et al. 1999
	waste water effluent	3.35	ug/l (max)	effluent from sedimentation tank		Germany	Stumpf et al, 1996; Cited in Stuer-Lauridsen et al, 2000

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ibuprofen	waste water effluent	12	ug/l (max)	effluent from sedimentation tank	enantioselective GC/MS analysis of methyl esters	Germany	Stumpf et al, 1986; Cited in Halling-Sorensen et al, 1998
	waste water effluent	3.4	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	900-3300	ng/l	wastewater influent		Switzerland	Buser et 1999
	waste water influent	0.3	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	waste water influent	3.3	ug/l (max)	waste water influent		Switzerland	Buser, Poiger et al, 1999; Cited in Daughton and Temes, 1999
ifosamide	raw sewage	24	ng/l	hospital sewage	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Germany	Steger-Hartmann et al, 1996; Cited in Daughton and Temes, 1999
	sewage effluent	detected in 0/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999		Canada	Metcalfe et al, 2000
	sewage influent	detected in 0/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS		Canada	Metcalfe et al, 2000
	surface water	< 0.01		surface water		Germany	Temes, 1998
	waste water effluent	24	ng/l	treated hospital effluent from STP			Steger-Hartmann et al, 1996; Cited in Halling-Sorensen et al, 1998
	waste water effluent	109	ng/l (median)	hospital effluent		Germany	Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	waste water effluent	1.91	ug/l (max)	hospital effluent		Germany	Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	waste water effluent	6.5-9.3	ng/l (median)	STP effluent		Germany	Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	waste water effluent	43	ng/l (max)	STP effluent		Germany	Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	waste water effluent	2.9	ug/l (max)	waste water effluent		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
indomethacin	waste water influent	6.5-9.3	ng/l (median)	STP influent	SPE GC/MS	Germany	Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	waste water influent	43	ng/l (max)	STP influent		Germany	Kummerer et al, 1997; Cited in Daughton and Temes, 1999
	sewage effluent	max 1.0	ng/l	10 Brazilian STPs		Brazil	Stumpf, Temes et al. 1999

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indomethacin	sewage effluent	detected in 9/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage influent	detected in 16/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	<0.005 - 0.121	ug/l			Germany	Stumpf et al:1996 cited in Stan and Heberer, 1997
	surface water	0.05	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	surface water	max 30	ng/l	river water	GC/MS	Germany	Sacher et al: 1998
	surface water	<5	ng/l	river water	GC/MS	Germany	Sacher et al: 1998
	surface water	0.2	ug/l (max)	surface water		Germany	Temes, 1998
	waste water	>0.05 - 0.52	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water	0.29	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
	waste water effluent	0.6	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	0.95	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
iopamidol	waste water effluent	15	ug/l (max)	waste water effluent			Temes and Hirsch, 2000a (ES&T, 34:2741-48)
	waste water effluent	0.49	ug/l (median)	waste water effluent			Temes and Hirsch, 2000a (ES&T, 34:2741-48)
iopromide	PEC sw.	2	ug/l	predicted from use and sewage volume	EU RA guideline method	Germany	Steger-Hartmann et al, 1999
iopromide metabolites	surface water	detected		rivers		Germany	Temes and Hirsch, 2000a (ES&T, 34:2741-48)
	waste water effluent	11	ug/l (max)	waste water effluent		Germany	Temes and Hirsch, 2000a (ES&T, 34:2741-48)
ivermectin	dung	<0.02	mg/kg ww	cattle; 276 kg; 0.2 mg/kg bw sc inj; after 12 d	measured		Lumaret et al; Cited in Montforts et al, 1999
	dung	0.42	mg/kg ww	cattle; 276 kg; 0.2 mg/kg bw sc inj; after 5 d	measured		Lumaret et al; Cited in Montforts et al, 1999
	dung	1.35	mg/kg dw	cattle; 300 kg; 0.2 mg/kg bw sc inj; after 14 d	measured		Sommer and Steffansen; Cited in Montforts et al, 1999

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ivermectin	dung	0.58	mg/kg ww	cattle; 300 kg; 0.2 mg/kg bw sc inj; after 2 d	measured		Sommer and Steffansen; Cited in Montforts et al, 1999
	dung	1.35	mg/kg ww	cattle; 300 kg; 0.5 mg/kg bw pour-on; after 1 d	measured		Sommer and Steffansen; Cited in Montforts et al, 1999
	dung	<0.05	mg/kg ww	cattle; 300 kg; 0.5 mg/kg bw pour-on; after 14 d	measured		Sommer and Steffansen; Cited in Montforts et al, 1999
	dung	0.66	mg/kg ww	cattle; 300 kg; 12 mg/d intraruminal	determined using bioassay with <i>Neomyia cornuta</i> (dung fly)		Strong et al, 1996; Cited in Montforts et al, 1999
	dung	1.7	mg/kg ww	horse; 0.2 mg/kg bw oral; after 1 d	measured		Herd, 1995; Cited in Montforts et al, 1999
	dung	<0.05	mg/kg ww	horse; 0.2 mg/kg bw oral; after 4 d	measured		Herd, 1995; Cited in Montforts et al, 1999
	feces	>60%		% of dose of 0.3 mg/kg bw excreted by cow in 3 d			Chiu et al, 1990; Cited in Halling-Sorensen et al, 1998
	feces	19	ug/kg wet wt	cow dung (injectable ivermectin)			Bloom and Matheson, 1993
	feces	351	ug/kg wet wt	cow dung (injectible ivermectin)			Bloom and Matheson, 1993
	feces	35	ug/kg wet wt	cow dung (pour-on ivermectin)			Bloom and Matheson, 1993
	feces	7	ug/kg wet wt	cow dung (pour-on ivermectin)			Bloom and Matheson, 1993
PEC	1.39	mg/kg ww dung		predicted conc in dung 1 d after dosing in beef cattle	calculated		Montforts et al, 1999
PEC	1.16	mg/kg ww dung		predicted conc in dung 1 d after dosing in dairy cattle	calculated		Montforts et al, 1999
PEC	<0.0004	mg/kg ww dung		predicted conc in dung 11 d after dosing in beef cattle	calculated		Montforts et al, 1999
PEC	0.0003	mg/kg ww dung		predicted conc in dung 11 d after dosing in dairy cattle	calculated		Montforts et al, 1999
PEC	0.84	mg/kg ww dung		predicted conc in dung 2 d after dosing in beef cattle	calculated		Montforts et al, 1999
PEC	0.70	mg/kg ww dung		predicted conc in dung 2 d after dosing in dairy cattle	calculated		Montforts et al, 1999
PEC	0.75	mg/kg ww dung		predicted conc in dung 3 d after dosing in beef cattle	calculated		Montforts et al, 1999
PEC	0.63	mg/kg ww dung		predicted conc in dung 3 d after dosing in dairy cattle	calculated		Montforts et al, 1999
PEC	0.31	mg/kg ww dung		predicted conc in dung 4 d after dosing in beef cattle	calculated		Montforts et al, 1999

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ivermectin	PEC	0.26	mg/kg ww dung	predicted conc in dung 4 d after dosing in dairy cattle	calculated		Montforts et al, 1999
	PEC	0.10	mg/kg ww dung	predicted conc in dung 5 d after dosing in beef cattle	calculated		Montforts et al, 1999
	PEC	0.08	mg/kg ww dung	predicted conc in dung 5 d after dosing in dairy cattle	calculated		Montforts et al, 1999
	PEC	0.02	mg/kg ww dung	predicted conc in dung 6 d after dosing in beef cattle	calculated		Montforts et al, 1999
	PEC	0.02	mg/kg ww dung	predicted conc in dung 6 d after dosing in dairy cattle	calculated		Montforts et al, 1999
	PEC	0.02	mg/kg ww dung	predicted conc in dung 7 d after dosing in beef cattle	calculated		Montforts et al, 1999
	PEC	0.01	mg/kg ww dung	predicted conc in dung 7 d after dosing in dairy cattle	calculated		Montforts et al, 1999
	PEC	36	mg/kg ww dung	predicted conc in dung directly after dosing in beef cattle	calculated		Montforts et al, 1999
	PEC	30	mg/kg ww dung	predicted conc in dung directly after dosing in dairy cattle	calculated		Montforts et al, 1999
	runoff	no toxicity		bioassay with Daphnia			Bloom and Matheson, 1993
soil	runoff	<10	ng/l	runoff from pen with animals treated with ivermectin	HPLC		Bloom and Matheson, 1993
	soil	5.1	ug/kg	soil after application of cow dung (injectible ivermectin)			Bloom and Matheson, 1993
	soil	0.27	ug/kg	soil after application of cow dung (injectible ivermectin)			Bloom and Matheson, 1993
	soil	0.09	ug/kg	soil after application of cow dung (pour-on ivermectin)			Bloom and Matheson, 1993
	soil	0.51	ug/kg	soil after application of cow dung (pour-on ivermectin)			Bloom and Matheson, 1993
	surface water	0.153	ng/l	pond - 1 acre - 100 cattle standing in pond			Bloom and Matheson, 1993
	surface water	<0.05	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
ketoprofen	surface water	nd				Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997
	waste water	<0.05 - 0.38	ug/l			Germany	Stumpf et al 1996 cited in Stan and Heberer, 1997

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ketoprofen	waste water	<0.05	ug/l			Germany	AWWR, 1995 cited in Stan and Heberer, 1997
ketoprofen	sewage effluent	max 0.8	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	sewage effluent	detected in 0/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage influent	detected in 1/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	surface water	<10	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	<10	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	0.12	ug/l (max)	surface water		Germany	Temes, 1998
	waste water effluent	0.38	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	0.5	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
LAB	activated sludge	58 to 78	mg/kg dry weight				Holt and Bernstein, 1992 cited in Binetti et al. 2000
	activated sludge	10 average	mg/kg dry weight			UK	UK Dept. of Environment, 1994 cited in Binetti et al. 2000
	sediment	0.01 to 15.8	mg/kg dry weight	sediment		Japan	Takada and Ishiwatari, 1987 cited in Binetti et al. 2000
	sediment	2.5 ave	mg/kg dry weight	sediment		Japan	Takada and Ishiwatari, 1987 cited in Binetti et al. 2000
	sediment	0.01 to 0.02	mg/kg dry weight	downstream sediment of STP		UK	UK Dept. of Environment, 1994 cited in Binetti et al. 2000
	sediment	0.001	mg/kg dry weight	upstream sediment		UK	UK Dept. of Environment, 1994 cited in Binetti et al. 2000
	sediment	0.66	mg/kg dry weight	sediment of surface water receiving effluents		US	Gledhill et al. 1991 cited in Binetti et al. 2000
	sludged amended soil	0.005 to 0.044	mg/kg dry weight			UK	Holt and Bernstein, 1992 cited in Binetti et al. 2000
	surface water	<0.0001 to 0.001	mg/l	surface waters receiving wastewater effluents		US	Gledhill et al. 1991 cited in Binetti et al. 2000
malachite green	PIECsw	0.0006	mg/l	surface water near fish farm - continuous treatment; no STP	calculated		Montforts et al, 1999

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malachite green	PIECsw	0.3	mg/l	surface water near fish farm - no treatment; no STP	calculated		Montforts et al, 1999
	PIECsw	0.004	mg/l	surface water near fish farm - occasional treatment; no STP	calculated		Montforts et al, 1999
mebendazole	PIECsw	0.01	mg/l	surface water near fish farm - continuous treatment; no STP	calculated		Montforts et al, 1999
	PIECsw	5	mg/l	surface water near fish farm - no treatment; no STP	calculated		Montforts et al, 1999
meclofenamic acid	surface water	< 0.05	mg/l	surface water		Germany	Temes, 1998
	waste water effluent	< 0.010	mg/l	waste water effluent		Germany	Temes, 1998
medroxyprogesterone acetate	waste water	bdl		waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
	waste water	ave 0.20	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
meprobamate	waste water	0.09 - 0.30	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.15	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
mestranol	waste water	0.06 - 0.29	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	ground water	detected		ground water plume - 21 yrs old - waste from hospital landfilled in 1968-1969		USA, Florida	Eckel et al, 1993; Cited in Halling-Sorensen et al, 1998
methaqualone	sewage effluent	<0.001	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Canada	Temes, Stumpf, Muller, et al. 1999
	sewage effluent	max 0.004	ug/l	sewage effluent	solid phase extraction GC/MS/MS	Germany	Temes, Stumpf, Muller, et al. 1999
methicillin	surface water	<0.0005	ug/l	rivers and streams 15	solid phase extraction GC/MS/MS	Germany	Temes, Stumpf, Muller, et al. 1999
	waste water	ave 1.21	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
methicillin	waste water	0.5 - 1.94	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.4 - 1.90	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
methicillin	waste water	ave 1.08	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	sewage	~1	ug/l	sewage	GC/MS	England	Richardson and Bowron, 1985
methicillin	ground water	<0.05	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999

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methicillin	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	<0.02	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.02	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	<0.02	ug/l (n=4)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
methotrexate	drinking water	<6.25	ng/l	drinking water	GC/MS	England	Richardson and Bowron, 1985
	drinking water	<6.25	ng/l	drinking water		UK	Aherne,English et al.1985 cited in Aherne et al. 1990
	PEC	<0.001	mg/l	surface water - 0% removal rate	EU method	Germany	Henschel et.al, 1997
	sewage	~1	ug/l	sewage	GC/MS	England	Richardson and Bowron, 1985
	surface water	<6.25	ng/l	river water	GC/MS	England	Richardson and Bowron, 1985
	surface water	<6.25	ng/l	river water		UK	Aherne,English et al.1985 cited in Aherne et al. 1990
	wastewater effluent	1	ug/l	waste water effluent immediately downstream of an oncology clinic		UK	Aherne,English et al.1985 cited in Aherne et al. 1990
metoprolol	surface water	med 31	ng/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	surface water	13-1540	ng/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	waste water	<0.025 -2.20	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
	waste water	med732	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
	waste water	max 2.2	ug/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
metronidazole	surface water	0.01	ug/l	surface water theoretical concentration			Kummerer et al. 2000
	waste water	70 - 110	ug/l	hospital wastewater theoretical			Kummerer et.al. 2000
	waste water	0.1	ug/l	municipal wastewater theoretical			Kummerer et al. 2000
musk -AHMI (phantolid)	breastmilk -fat	14	ug/kg	human breastmilk fat			Eschke et.al, 1995b, cited in Mersch-Sundermann et al., 1998
	fish	<4 to 5	ng/g	fish from 6 rivers and 2 lakes n=28	ASE GC/MS	Italy	Draisci et.al. 1998
musk -ADBI (Celestolide)	breastmilk -fat	22	ug/kg	human breastmilk fat			Eschke et al, 1995b, cited in Mersch-Sundermann et al., 1998

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musk -ADBI- (Celestolide)	fish	<dl	mg/kg lipid (n=4)	fish - rainbow trout (aquaculture) - lipid 2.6-3.3%		Denmark	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=3)	fish - from sewage pond - chub - lipid 1.9-2.8%		Germany	Eschke et al, 1995b; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=5)	fish - from sewage pond - crucian carp - lipid 0.87-1.74%		Germany	Eschke et al, 1995b; Cited in Rimkus, 1999
	fish	0.94-1.5	mg/kg lipid (n=7)	fish - from sewage pond - crucian carp - lipid 1.1-4.3%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	fish	0.03	mg/kg lipid (n=2)	fish - from sewage pond - eel - lipid 15.7, 17.9%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	fish	<dl-1.0	mg/kg lipid (n=5)	fish - from sewage pond - eel - lipid 16.5-30.2%		Germany	Eschke et al, 1995b; Cited in Rimkus, 1999
	fish	0.16-0.21	mg/kg lipid (n=3)	fish - from sewage pond - rudd - lipid 0.7-0.9%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	fish	1.6-2.0	mg/kg lipid (n=4)	fish - from sewage pond - tench - lipid 0.5-1.4%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=2)	fish - from river - eel - lipid 20.9, 23.7%		Germany	Eschke et al, 1995b; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=5)	fish - from river - eel - lipid 21.1-29.1%		Germany	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=4)	fish - from river - pike-perch - lipid 0.3-0.7%		Germany	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	0.73, 1.12	mg/kg lipid (n=2)	fish - from river 3 km downstream of STP outfall - brown trout - lipid 1.3, 3.5%		Germany	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=3)	fish from river - bream - lipid 0.45-1.56%		Germany	Eschke et al, 1995b; Cited in Rimkus, 1999
	fish	<dl	mg/kg lipid (n=2)	fish from river - perch - lipid 0.36, 0.72%		Germany	Eschke et al, 1995b; Cited in Rimkus, 1999
	fish	2.5 - 4.6	mg/kg fatty tissue	In bream and perch from Ruhr river		Germany	Eschke et al, 1994 and 1995a, cited in Mersch-Sundermann et al., 1998
	fish	<4	ng/g	fish from 6 rivers and 2 lakes:n=28	ASE GC/MS	Italy	Draisici et al. 1998
human-fatty tissues		0.12 - 3.5	ug/kg	human fatty tissues			Muller et al. 1998 cited in Mersch-Sundermann et al., 1998

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musk -ADBI (Celestolide)	sediment	0.0006	ug/g:dw (n=1)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	<0.0005	ug/g:dw (n=2)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	<0.0005, 0.0007	ug/g:dw (n=2)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	<0.0005	ug/g:dw (n=1)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	<0.0005	ug/g dw (n=2)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	shellfish	1.6	mg/kg lipid (n=1)	shellfish - from sewage pond - mussels - lipid 1.4%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	shellfish	<dl	mg/kg lipid (n=3)	shellfish - from sea - blue mussels - lipid 1.7-2.2%		North Sea G	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	shellfish	<dl	mg/kg lipid (n=4)	shellfish - from sea - shrimp - lipid 0.9-1.0%		North Sea G	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	surface water	<0.03	ug/l (mean of 64)	river		Germany	Eschke, 1998; Cited in Rimkus, 1999
	surface water	0.004 (<0.002-0.008)	ug/l (mean, range of 31)	river		Germany	Winkler et al, 1998; Cited in Rimkus, 1999
	surface water	<0.03	ug/l (mean of 23)	river		Germany	Eschke et al, 1994; Cited in Rimkus, 1999
	surface water	0.003 (<0.002-0.005)	ug/l (mean, range of 31)	river water after centrifugation		Germany	Winkler et al, 1998; Cited in Rimkus, 1999
	surface water	0.104 (0.01-0.52)	ug/l (mean, range of 30)	rivers, lakes and canals		Germany	Heberer et al, 1999; Cited in Rimkus, 1999
	surface water	0.0032	ug/l (n=1)	river		Switzerland	Muller et al, 1996; Cited in Rimkus, 1999
	suspended solids	0.015 (0.004-0.043)	ug/g dw (mean, range of 31)	river SS		Germany	Winkler et al, 1998; Cited in Rimkus, 1999
	waster water effluent	0.06 (0.04-0.07)	ug/l (mean, range of 7)	STP effluent		Germany	Eschke et al, 1994; Cited in Rimkus, 1999
	waster water Influent	0.04-0.14	ug/l (mean, range of 7)	STP Influent		Germany	Eschke et al, 1994; Cited in Rimkus, 1999
musk nitro - libetene	sewage sludge	nd; dl ~1	ug/kg dry mass	sewage sludge of different catchment areas n= 10	HRGC Ion trap MS/MS	Switzerland	Berset et al. 2000

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musk nitro - tibetene	surface water	<10	ng/l	surface waters of Berlin area	solid-phase microextraction capillary GC/MS	Germany	Heberer et al. 1999
musk nitro - xylene	biota	220-260	ug/kg lipid	eel (lipid 16-18%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	130	ug/kg lipid	mussels (lipid 1.4%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	340	ug/kg lipid	rainbow trout (lipid 2.3%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	100	ug/kg lipid	rainbow trout (lipid 3.9%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	18-440	ug/kg lipid	rudd, tench, carp (lipid 0.6-3.5%)			Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	10-84	ug/kg lipid	bream (lipid 1.2-1.7%)		Germany	Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	23-99	ug/kg lipid	pike-perch (lipid 0.3-0.7%)		Germany	Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
	biota	11-207	ug/kg lipid	rainbow trout (lipid 2.4-4.2%)		Germany	Gatermann et al. 1999a; Rimkus et al. 1999b- cited in Rimkus et al. 1999
eel	0.03 (<0.004-0.08)	mg/kg ww (median, range of 13)	eel			Netherlands	unpublished report; Cited in Tas, Balk et al, 1997
eel	0.014 (<0.0005-0.045)	mg/kg ww (median, range of 10)	eel			Netherlands	unpublished report; Cited in Tas, Balk et al, 1997
eel - fat	0.13 (<0.02-0.43)	mg/kg (median, range of 13)	eel fat			Netherlands	unpublished report; Cited in Tas, Balk et al, 1997
fish	0.1-0.21	mg/kg lipid (n=4)	fish - rainbow trout (aquaculture) - lipid 2.6-3.3%			Denmark	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
fish	0.222-0.395	mg/kg lipid (n=7)	fish - from sewage pond - crucian carp - lipid 1.1-4.3%			Germany	Rimkus and Wolf; Cited in Rimkus, 1999
fish	0.205, 0.265	mg/kg lipid (n=2)	fish - from sewage pond - eel - lipid 15.7, 17.9%			Germany	Rimkus and Wolf; Cited in Rimkus, 1999

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musk nitro - xylene	fish	0.018-0.029	mg/kg lipid (n=3)	fish - from sewage pond - rudd - lipid 0.7-0.9%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	fish	0.185-0.36	mg/kg lipid (n=4)	fish - from sewage pond - tench - lipid 0.5-1.4%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999
	fish	0.01-0.07	mg/kg lipid (n=5)	fish - from river - eel - lipid 21.1-29.1%		Germany	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	<0.01-0.09	mg/kg lipid (n=4)	fish - from river - pike-perch - lipid 0.3-0.7%		Germany	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	0.2, 0.24	mg/kg lipid (n=2)	fish - from river 3 km downstream of STP outfall - brown trout - lipid 1.3, 3.5%		Germany	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	fish	0.015 (<0.005-0.300)	mg/kg ww (mean, range)	trout (fat) from rivers		Germany	Hahn, 1993; Cited in Tal, Balk et al, 1997
	fish	0.026 (0.011-0.082)	mg/kg ww (mean, range of 44)	trout from pond and river		Germany	Hahn, 1993; Cited in Tal, Balk et al, 1997
	fish - fat	2.4 (1.8-3.6)	mg/kg (median, range of 13)	fish fat from effluent pond		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997
	fish - fat	0.02 (0.01-0.10)	mg/kg (mean, range of 50)	fish fat from fish farm		Germany	Rimkus and Wolf, 1995; Cited in Tas, Balk et al, 1997
	fish - fat	0.53 (nd-1.0)	mg/kg (median, range of 9)	fish fat from river		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997
	fish - fat	0.08 (<0.01-0.35)	mg/kg (mean, range of 31)	fish fat from rivers		Germany	Rimkus and Wolf, 1995; Cited in Tas, Balk et al, 1997
	fish - fat	0.07 (0.01-0.35)	mg/kg (median, range of 26)	fresh water fish - fat		Germany	Rimkus and Wolf, 1993; Cited in Tas, Balk et al, 1997
	fish - fat	0.01-0.02	mg/kg (n=9)	mussels - fat		Germany	Rimkus and Wolf, 1993; Cited in Tas, Balk et al, 1997
	fish - fat	0.68 (0.34-1.8)	mg/kg ww (mean, range of 44)	trout (fat) from pond and river		Germany	Hahn, 1993; Cited in Tal, Balk et al, 1997
	fish - fat	0.39 (0.3-0.78)	mg/kg ww (mean, range)	trout (fat) from rivers		Germany	Hahn, 1993; Cited in Tal, Balk et al, 1997
	fish - fat	0.33 (0.09-1.06)	mg/kg (median, range of 46)	trout fat (fish farm)		Germany	Rimkus and Wolf, 1993; Cited in Tas, Balk et al, 1997
	fish - muscle	0.051 (0.002-0.095)	mg/kg (median, range of 13)	fish muscle from effluent pond		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997

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musk nitro - xylene	fish - muscle	0.008 (0.002-0.095)	mg/kg (median, range of 9)	fish muscle from river		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997
	fish - muscle	0.015 (0.0015-0.041)	mg/kg ww (median, range of 31)	carp muscle		Japan	Yamagishi et al, 1983; Cited in Tas, Balk et al, 1997
	fish - viscera	0.002 (0.0014-0.14)	mg/kg ww (median, range of 31)	carp viscera		Japan	Yamagishi et al, 1983; Cited in Tas, Balk et al, 1997
	freshwater fish	0.2	ppm	freshwater fish from Tama River			Yamagishi et al, 1981 cited in Ippen, 1994.
	PEC (predator)	0.089	mg/kg fw			Netherlands	Tas, Balk et al, 1997
	PEC (soil)	0.29	mg/kg:dw	Netherlands		Netherlands	Tas, Balk et al, 1997
	PEC (water)	0.11	ug/l	Netherlands regional water			Tas, Balk et al, 1997
	sea water	<0.00003	ug/l (median of 30)	below surface of sea		North Sea	Rimkus and Wolf, 1993; Cited in Tas, Balk et al, 1997
	sea water	0.00017	ug/l (max of 30)	below surface of sea		North Sea	Rimkus and Wolf, 1993; Cited in Tas, Balk et al, 1997
	sediment	0.0007, 0.001	ug/g dw (n=2)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	0.0005, 0.0007	ug/g dw (n=2)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	0.0022	ug/g dw (n=1)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	0.0007	ug/g dw (n=1)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	0.0004, 0.0009	ug/g dw (n=2)	river sediment		Germany	Lach and Steffen, 1997; Cited in Rimkus, 1999
	sediment	263	ng/kg	sediment -river Elbe n=1		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
	sediment	185-296	ng/kg	sediment -river Elbe n=3		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
	sediment	500;800	ng/kg	sediment -sewage pond n=2		Germany	Biselli, 1997; Gatermann et al. 1999a cited in Rimkus et al. 1999
	sewage sludge	32.5	ug/kg dry mass	detected in one sewage sludge sample only n=10	HRGC ion trap MS/MS	Switzerland	Berset et al. 2000
	shellfish	0.121	mg/kg lipid (n=1)	shellfish - from sewage pond - mussels - lipid 1.4%		Germany	Rimkus and Wolf; Cited in Rimkus, 1999

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musk nitro - xylene	shellfish	0.0017-0.053	mg/kg ww (n=9)	shellfish		Japan	Yamagishi et al, 1983; Cited in Tas, Balk et al, 1997
	shellfish	<0.01-0.02	mg/kg lipid (n=3)	shellfish - from sea - blue mussels - lipid 1.7-2.2%		North Sea G	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	shellfish	<0.01-0.01	mg/kg lipid (n=4)	shellfish - from sea - shrimp - lipid 0.9-1.0%		North Sea G	Rimkus and Brunn, 1996; Rimkus and Wolf, 1997; 1999; Cited in Rimkus, 1999
	shellfish - fat	0.01	mg/kg	shrimp fat		Germany	Rimkus and Wolf, 1995; Cited in Tas, Balk et al, 1997
	sludge	dl-0.114	ug/g dw (1/9 >dl)	municipal sewage sludge - 9 plants		Germany	Fooken et al, 1997; Cited in Rimkus, 1999
	surface water	0.01 (dl-0.03)	ug/l (mean, range of 23)	river		Germany	Eschke et al, 1994; Cited in Rimkus, 1999
	surface water	0.001-0.003	ug/l (median of 64)	river		Germany	Eschke, 1996; Cited in Rimkus, 1999
	surface water	0.01 (0.01-0.03)	ug/l (mean, range of 34)	river water		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997
	surface water	2 (<1-39)	ug/l (median, range of 17)	river water		Germany	Hahn, 1993; Cited in Tas, Balk et al, 1997
	surface water	<1	ng/l	river water (Elbe)	GC/PND	Germany	Gatermann et al, 1998, 1999a cited in Rimkus et al, 1999
	surface water	<1	ng/l	river water (Elbe)	GC/PND	Germany	Gatermann et al, 1998, 1999a cited in Rimkus et al, 1999
	surface water	<1-2	ng/l	river water (Elbe)	GC/PND	Germany	Gatermann et al, 1998, 1999a cited in Rimkus et al, 1999
	surface water	<0.18	ug/l (n=1)	rivers, lakes and canals		Germany	Heberer et al, 1999; Cited in Rimkus, 1999
	surface water	0.0035 (0.0017-0.0023)	ug/l (median; range of 18)	river water		Japan	Yamagishi et al, 1983; Cited in Tas, Balk et al, 1997
	surface water	<0.01	ug/l (n=31)	river water		Netherlands	Bruekel et al, 1996; Cited in Tas, Balk et al, 1997
	surface water	<0.01	ug/l (n=34)	river water		Netherlands	Bruekel et al, 1996; Cited in Tas, Balk et al, 1997
	surface water	0.00062	ug/l (n=1)	river		Switzerland	Muller et al, 1996; Cited in Rimkus, 1999
	suspended solids	0.008 (dl-0.046)	ug/g dw (median, range of 13)	river SS		Germany	Fooken et al, 1997; Cited in Rimkus, 1999

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musk nitro - xylene	suspended solids	dl-0.014	ug/g dw (range of 13)	surface water SS		Germany	Focken et al, 1997; Cited in Rimkus, 1999
	suspended solids	1.0	mg/kg (max of 14)	river sediments		Netherlands	Bruekel et al, 1996; Cited in Tas, Balk et al, 1997
	suspended solids	<0.05	mg/kg (median of 14)	river sediments		Netherlands	Bruekel et al, 1996; Cited in Tas, Balk et al, 1997
	suspended solids	<0.05	mg/kg (n=14)	river sediments		Netherlands	Bruekel et al, 1996; Cited in Tas, Balk et al, 1997
	waste water	0.5	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	<3	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	2;3	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	10	ng/l	sewage effluent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	150	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water	2	ng/l	sewage influent	GC/PND	Germany	Gatermann et al. 1998, 1999a cited in Rimkus et al. 1999
	waste water effluent	22	ng/l	waste water effluent		Germany	Hahn, 1993; Cited in Tas, Balk et al, 1997
	waste water effluent	0.035 (0.025-0.036)	ug/l (median; range of 18)	waste water effluent		Japan	Yamagishi et al, 1983; Cited in Tas, Balk et al; 1997
	waste water effluent	1.5	ug/l (n=3)	waste water effluent		Sweden	Paxeus; Cited in Tas, Balk et al, 1997
	waste water influent	0.68 (0.09-1.7)	ug/l (median, range of 19)	waste water influent		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997
	waste water influent	53	ug/l (n=2)	waste water influent		Germany	Hahn, 1993; Cited in Tas, Balk et al, 1997
	waster water effluent	0.03-0.31	ug/l (mean)	STP effluent		Germany	Eschke et al, 1994; Cited in Rimkus, 1999
	waster water influent	0.09-1.7	ug/l (mean)	STP influent		Germany	Eschke et al, 1994; Cited in Rimkus, 1999
	water water effluent	0.12 (0.03-0.31)	ug/l (median, range of 36)	waste water effluent		Germany	Eschke et al, 1994; Cited in Tas, Balk et al, 1997
tissue concentration - rainbow trout	~100	ppb		rainbow trout exposed to 1 and 10 ug/l musk xylene days 7, 14 and 21	GC/MS analysis		Boleas et al. 1996

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musk nitro - xylene	tissue concentration - rainbow trout	~1500	ppb	rainbow trout exposed to 100 ug/l musk xylene days 21	GC/MS analysis		Boleas et al. 1996
	tissue concentration - rainbow trout	~1000	ppb	rainbow trout exposed to 100 ug/l musk xylene days 7 and 14	GC/MS analysis		Boleas et al. 1996
nadolol	surface water	<5 - 9	ng/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	surface water	med <5	ng/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	surface water	< 0.01	ug/l	surface water		Germany	Ternes, 1998
	waste water	<25 - 57	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
	waste water	med 26	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
	waste water effluent	0.06	ug/l (max)	waste water effluent		Germany	Ternes, 1998
nafcillin	ground water	<0.02	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al. 1999
	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	<0.02	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al. 1999
	surface water	<0.02	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	<0.02	ug/l (n=4)		HPLC ESI-MS/MS	Germany	Hirsch et al. 1999
naproxen	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Ternes et al. 1999
	sewage effluent	detected in 3/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al. 2000
	sewage influent	detected in 16/18		sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al. 2000
	surface water	<0.005 to 0.4	ug/l	9 rivers and streams	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998
	surface water	0.005 - 0.4	ug/l	river water	GC/MS	Germany	Ternes et al. 1998
	surface water	0.39	ug/l (max)	surface water		Germany	Ternes, 1998
	surface water	<0.01 to 0.05	ug/l	Paraiba do Sul river	SPE GC/MS	Rio de Janeiro	Stumpf, Ternes et al. 1999
	waste water effluent	0.52	ug/l (max)	waste water effluent		Germany	Ternes, 1998

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naproxen	waste water influent	0.6	ug/l	waste water influent		Brazil	Stumpf et al, 1999; Cited in Daughton and Temes, 1999
nicotine	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
N-methylphenacetin	groundwater	(<5 - 470)	ug/l			Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
	surface water	detected not quantified				Germany	Stan and Heberer, 1997
nodolol	surface water	<0.005 - 0.009	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
	waste water	<0.025 - 0.29	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
nonylphenol	fish	up to 0.8	ug/g in muscle, BCF ~ 50	fish from River Aire	GC/MS analysis	UK	Blackburn et al. 1999
	sediment concentration	15	ug/g dry weight	Bingley on River Aire	GC/MS analysis	UK	Blackburn et al. 1999
	sediment concentration	>1	ug/g dry weight	Tees and Mersey estuaries	GC/MS analysis	UK	Blackburn et al. 1999
nonylphenol diethoxylate	final effluent	0.099 to 21	ug/l	final effluent of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	raw sewage	0.26 to 24	ug/l	raw sewage of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	sludge	1.5 to 297	ug/g dry weight	sludge of 16 wastewater treatment plants		Canada	Bennie et al. 1998
nonylphenol ethoxylates	final effluent	0.072 to 26	ug/l	final effluent of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	raw sewage	2.9 to 43	ug/l	raw sewage of 16 wastewater treatment plants		Canada	Bennie et al. 1998
	sludge	3.9 to 437	ug/g dry weight	sludge of 16 wastewater treatment plants		Canada	Bennie et al. 1998
nonylphenol/alkylphenols	surface water	6 to 11	ug/l	River Mersey	GC/MS analysis	UK	Blackburn et al. 1999
	surface water	15 to 76	ug/l	River Aire	GC/MS analysis	UK	Blackburn et al. 1999
	surface water	up to 76	ug/l	Tees estuary	GC/MS analysis	UK	Blackburn et al. 1999
	waste water	0.1	ppm	sewage effluent		UK	White et al. 1994 cited in Crisp et al. 1998
norethindrone	waste water	0.45 - 1.20	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.83	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.26 - 1.01	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981

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norethindrone	waste water	ave 0.60	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
norethindrone acetate	waste water	0.15 - 0.45	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.27	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.2	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.10 - 0.38	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
norethisterone	drinking water	<2 - <10	ng/l	drinking water		UK	Aherne and Briggs, 1989
	surface water	<2 - 10	ng/l	reservoir		UK	Aherne and Briggs, 1989
	surface water	<10 - 17	ng/l	river		UK	Aherne and Briggs, 1989
	waste water effluent	8-20	ng/l	effluent from sedimentation tank			Aherne and Briggs, 1989
norethynodrel	waste water	0.35 - 0.8	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.54	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.21 - 0.66	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.38	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
ofloxacin	surface water	0.05	ug/l	surface water theoretical concentration			Kummerer et al. 2000
	waste water	0.5 - 50	ug/l	hospital wastewater theoretical			Kummerer et al. 2000
	waste water	0.5	ug/l	municipal wastewater theoretical			Kummerer et al. 2000
o-hydroxyhippuric acid	sewage effluent	<0.01	ug/l	average conc. In sewage effluent of an STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	sewage effluent	<0.2	ug/l	sewage effluent 36 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	sewage influent	6.8	ug/l	average conc. in sewage influent of an STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	bdl	ug/l (max)	surface water		Germany	Temes, 1998; Cited in Daughton and Temes, 1999
	waste water	6.8 + 2.4	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	<0.1	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water effluent	bdl	ug/l (max)	waste water effluent		Germany	Temes, 1998; Cited in Daughton and Temes, 1999.
	waste water effluent	bdl	ug/l	waste water effluent		Germany	Temes et al. 1998; Cited in Daughton and Temes, 1999

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o-hydroxyhippuric acid	waste water influent	6.8	ug/l	waste water influent		Germany	Ternes et al, 1998; Cited in Daughton and Ternes, 1999
olestra	concentration	656	mg/kg	max conc. in sludge-amended agricultural soil	estimated		Allgood et al. 1997
	concentration	1282	mg/L	max. conc. in sludge (or 32 g/kg dry weight)	estimated		Allgood et al. 1997
	concentration	0.29	mg/l	max. estimated s.w. conc for 90% of US receiving streams under mean flow conditions	estimated		Allgood et al. 1997
	concentration	100	g/kg	max. sediment conc. for max effluent of 1.0 mg/l and TSS = 10 mg/L and olestra is 10% of solids. @ TSS= 100mg/L olestra would be about 10 mg/kg	estimated		Allgood et al. 1997
	concentration	0	mg/kg	max. steady-state soil conc for liquid olestra	estimated 1 year after application		Allgood et al. 1997
	concentration	39	mg/kg	max. steady-state soil conc for solid olestra	estimated		Allgood et al. 1997
	concentration	1	mg/l	nationwide average municipal effluent based on three treatment types (4% primary, 21% trickling filter, 75% activated sludge)	estimated		Allgood et al. 1997
	concentration	2.7	mg/L	primary treated wastewater	estimated		Allgood et al. 1997
	concentration	0.43	mg/L	secondary treated wastewater	estimated		Allgood et al. 1997
	waste water	4.9	mg/L	max conc wastewater	estimated		Allgood et al. 1997
oral contraceptive	surface water	<0.2	ug/l	river			Aherne and English, 1985; Cited in Halling-Sorensen et al., 1998
	waste water effluent	<0.1	ug/l	waste water effluent			Aherne and English, 1985; Cited In Halling-Sorensen et al., 1998
oxacillin	ground water	<0.02	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	<0.02	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.02	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
oxytetracycline	waste water effluent	<0.02	ug/l (n=4)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	ground water	<0.05	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	PEC	0.016	ug/l	predicted conc in water at sediment conc of 10.9 ug/g			Smith and Samuelsen;Cited In Halling-Sorensen et al., 2000

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oxytetracycline	PEC	0.11	ug/l	predicted conc in water at sediment conc of 285 ug/g			Smith and Samuelsen; Cited in Halling-Sorensen et al, 2000
	PIECsw	0.07	mg/l	surface water near fish farm - continuous treatment; no degradation; with STP	calculated		Montforts et al, 1999
	PIECsw	0.15	mg/l	surface water near fish farm - continuous treatment; no STP	calculated		Montforts et al, 1999
	PIECsw	0.003	mg/l	surface water near fish farm - continuous treatment; ready biodegradation; with STP	calculated		Montforts et al, 1999
	PIECsw	75	mg/l	surface water near fish farm - no treatment; no STP	calculated		Montforts et al, 1999
	PIECsw	0.017	mg/l	surface water near fish farm - occasional treatment; ready biodegradation; with STP	calculated		Montforts et al, 1999
	PIECsw	0.49	mg/l	surface water near fish farm - occasional treatment; no degradation; with STP	calculated		Montforts et al, 1999
	PIECsw	1.005	mg/l	surface water near fish farm - occasional treatment; no STP	calculated		Montforts et al, 1999
	sediment	285	ug/g	sediment - fish farm use			Samuelson et al, 1992a; Cited in Halling-Sorensen et al, 1998
	sediment	0.1-11	ug/g	sediment - fish farm use			Bjorkland et al, 1990; 1991; Coyne et al, 1995; Poliquen et al, 1993; Weston et al, 1994; Kerry et al, 1995b; Cited in Halling-Sorensen et al, 1998
penicillin	sediment	0.1-4.9	mg/kg dw	sediment - fish farm use			Jacobsen and Berglind, 1988; Cited in Halling-Sorensen et al, 1998
	sewage effluent	<0.05	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al, 1999
	surface water	<0.05	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.05	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al, 1999
	waste water effluent	<0.05	ug/l (n=5)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
penicillin G	drinking water	10	ng/l	drinking water	GC/MS	England	Richardson and Bowron, 1985
	surface water	<25	ng/l	river water	GC/MS	England	Richardson and Bowron, 1985
penicillin G	ground water	<0.02	ug/l (n=37)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al, 1999

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penicillin G	surface water	<0.02	ug/l (n=14)	rivers	HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	<0.02	ug/l		HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	<0.02	ug/l (n=4)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
penicillin V	ground water	<0.02	ug/l (n=37)	sewage effluent	HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.02	ug/l		HPLC-electrospray-tandem-MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	surface water	<0.02	ug/l (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
pentoxifylin	surface water	<0.02	ug/l	rivers	HPLC ESI-MS/MS	Germany	Hirsch, Ternes, Haberer, et al. 1999
	waste water effluent	<0.02	ug/l (n=4)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	detected in 4/18	sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
phenacetin	sewage influent	detected in 0/18				Canada	Metcalfe et al, 2000
	surface water	max 190	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	max 260	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
phenazone	surface water	<20	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	surface water	<20	ng/l	river water	GC/MS	Germany	Sacher et al. 1998
	groundwater	<10 - 1250	ug/l	sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999 sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
phenacetin	sewage effluent	detected in 0/18	Canada			Metcalfe et al, 2000	
	sewage influent	detected in 0/18	Canada			Metcalfe et al, 2000	
	surface water	detected not quantified	river water	river water	GC/MS	Germany	Stan and Herberer, 1997
phenacetin	surface water	<25	ng/l			Germany	Sacher et al. 1998
	surface water	max 370 ng/l	Germany			Sacher et al. 1998	

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phenobarbital	ground water	detected		ground water plume - 21 yrs old - waste from hospital landfilled in 1968-1969		USA, Florida	Eckel et al, 1993; Cited in Halling-Sorensen et al, 1998
phensuximide	ground water	detected		ground water plume - 21 yrs old - waste from hospital landfilled in 1968-1969		USA, Florida	Eckel et al, 1993; Cited in Halling-Sorensen et al, 1998
phenylpropionic acid	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
phenylsalicylate	sewage effluent	max 0.02	ug/l	max value sewage effluent n=82 from 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	<0.01	ug/l	16 rivers n=31	GC/MS	Germany	Temes et al. 1998
	surface water	<0.010	ug/l	conc in 16 rivers and streams n=31	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	waste water	max 0.02	ug/l	STP discharges	GC/MS	Germany	Temes et al. 1998
pivmecillinam	PEC	0.059	ng/l	calculated based on use data - degrad considered (mecillinam data)		Europe	Halling-Sorensen et al, 2000
	PECmax	7.0	ng/l	calculated based on use data (mecillinam data)		Europe	Halling-Sorensen et al, 2000
platinum	hospital effluents	<10 to 601	ng/l	hospital effluents		Germany	Kummerer, Helmers, et al. 1999
pregnanediol	waste water	ave 6.83	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	1.04 - 12.66	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.47-9.00	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 4.08	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
progesterone	waste water	0.00 - 0.02	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave 0.01	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave <0.01	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.00 - 0.01	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
propanolol	surface water	0.59	ug/l (max)	surface water		Germany	Temes, 1998
	waste water effluent	0.29	ug/l (max)	waste water effluent		Germany	Temes, 1998
propanoprolol	surface water	<0.003 -0.008	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
	surface water	<3 - 98	ng/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	surface water	med 7	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996

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propanopropol	waste water	<0.025 - 0.29	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
	waste water	med 166	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
	waste water	max 286	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
propiphenazone	groundwater	nd - 1485	ug/l			Germany	Heberer et al., 1997 cited in Stan and Heberer, 1997
	surface water	<0.005 - 0.360	ug/l			Germany	Stan and Herberer, 1997
	waste water	up to 1.90	ug/l			Germany	Stan and Herberer, 1997
propylphenazone	ground water	4	mg/ml (max)	ground water down gradient of landfill		Denmark	Holm et al. 1995; Cited in Halling-Sorensen et al, 1998
	landfill leachate	0.3-4	mg/l	landfill leachate		Germany	Holm et al. 1995; Cited in Daughton and Temes, 1999
	surface water	prevalent		surface water - Berlin		Germany	Heberer et al. 1998; Cited in Daughton and Temes, 1999
roxithromycin	ground water	<0.02	ug/l (n=59)		HPLC-ESI-MS/MS	Germany	Hirsch et al. 1999
	sewage effluent	max 1.0	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	surface water	<0.02-0.56	ug/l (range of 52)		HPLC-ESI-MS/MS	Germany	Hirsch et al. 1999
	surface water	0.20	95th %ile (n=14)		HPLC-ESI-MS/MS	Germany	Hirsch et al. 1999
	surface water	max 0.56	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	waste water effluent	0.68 (<0.02-1.0)	ug/l (median, range of 10)		HPLC-ESI-MS/MS	Germany	Hirsch et al. 1999
	waste water effluent	0.80	ug/l (90th %ile of 10)		HPLC-ESI-MS/MS	Germany	Hirsch et al. 1999
saccharin	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al. 1976; Cited in Daughton and Temes, 1999
salbutamol	surface water	nd	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997
	surface water	<5	ng/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	surface water	0.035	ug/l (max)	rivers and streams		Germany	Temes, 1998
	surface water	0.035	ug/l (max)	surface water		Germany	Temes, 1998
	waste water	<0.025 - 0.17	ug/l			Germany	Hirsch et al. 1996 cited in Stan and Heberer, 1997

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salbutamol	waste water	med 48; max 174	ng/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et.al. 1996
	waste water effluent	0.17	ug/l (max)	sewage effluent		Germany	Ternes, 1998
	waste water influent	0.017	ug/l (max)	waste water influent		Germany	Ternes, 1998
salicylic acid	PEC	7.58	mg/l	surface water - 0% removal rate	EU method	Germany	Henschel et al, 1997
	PEC	7.58	mg/l	surface water - 0% removal rate	EU method	Germany	Henschel et al, 1997
	PEC	0.38	mg/l	surface water - 95% removal rate	EU method	Germany	Henschel et al, 1997
	PEC	0.38	mg/l	surface water - 95% removal rate	EU method	Germany	Henschel et al, 1997
	sewage effluent	detected in 6/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage effluent	detected in 6/18		sewage effluent n= 18 STPs from 14 municipalities in Canada collected in 1998-1999	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	sewage effluent	<0.02	ug/l	average conc. in sewage effluent of an STP	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998
	sewage effluent	<0.02	ug/l	average conc. in sewage effluent of an STP	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998
	sewage effluent	max 0.14	ug/l	sewage effluent 36 STP	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998
	sewage effluent	max 0.14	ug/l	sewage effluent 36 STP	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998
sewage influent	detected in all samples			sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	detected in all samples			sewage influent n=18 samples collected in 14 Canadian STPs STPS	solid phase extraction, methylation followed by GC/MS analysis for acidic drugs or direct analyses of neutral drugs by LC/ESI/MS/MS	Canada	Metcalfe et al, 2000
	54	ug/l		average conc. in sewage influent of an STP	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998
sewage influent	54	ug/l		average conc. in sewage influent of an STP	solid phase extraction, GC/MS analysis	Germany	Ternes, Stumpf et al. 1998

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salicylic acid	STP discharge amount	8.64 (0.55-28.69)	kg/d (mean, range of 7)	discharge amount measured on 7 different days	GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	STP discharge amount	8.64 (0.55-28.69)	kg/d (mean, range of 7)	discharge amount measured on 7 different days	GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	STP intake amount	90%	higher than discharge amount in effluent		GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	STP intake amount	90%	higher than discharge amount in effluent		GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	surface water	<0.01 to 0.14	ug/l	concentration in Rhine near Mainz, Jan 96 to Nov 96.	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	<0.01 to 0.14	ug/l	concentration in Rhine near Mainz, Jan 96 to Nov 96.	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	0.005 - 0.14	ug/l	river water	GC/MS	Germany	Temes et al. 1998
	surface water	0.005 - 0.14	ug/l	river water	GC/MS	Germany	Temes et al. 1998
	surface water	4.1	ug/l (max)	surface water		Germany	Temes, 1998
	surface water	4.1	ug/l (max)	surface water		Germany	Temes, 1998
	waste water	<0.02	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	<0.02	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	54 + 8	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	54 + 8	ug/l	ave 6 day conc municipal STP	GC/MS	Germany	Temes et al. 1998
	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
	waste water	detected not quantified		wastewater	GC/MS	US	Garrison et al, 1976; Cited in Daughton and Temes, 1999
	waste water effluent	0.14	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water effluent	0.5	ug/l	waste water effluent		Germany	Temes et al, 1998
	waste water effluent	0.5	ug/l	waste water effluent		Germany	Temes et al, 1998
	waste water effluent	0.14	ug/l (max)	waste water effluent		Germany	Temes, 1998
	waste water influent	.55	ug/l	waste water influent		Germany	Temes et al, 1998

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salicylic acid	waste water influent	55	ug/l	waste water influent		Germany	Temes et al, 1998
	waster water effluent	28.79 (1.83-95.62)	ug/l (mean, range of 7)	conc in effluent measured on 7 different days	GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
	waster water effluent	28.79 (1.83-95.62)	ug/l (mean, range of 7)	conc in effluent measured on 7 different days	GC-MS	USA, Kansas	Hignite and Azarnoff, 1977
sulfamethazine	ground water	<0.02-0.16	ug/l (range of 59)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.02	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	surface water	<0.02	ug/l (n=52)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
sulfamethoxazole	waste water effluent	<0.05	ug/l (n=10)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	ground water	<0.02-0.47	ug/l (range of 59)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	max 2.0	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
sulfonamides (various)	surface water	1	ug/l	river	field desorption MS and HPLC		Watts et al, 1983; Cited in Halling-Sorensen et al, 1998
	surface water	~1	ug/l	river water	GC/MS	England	Richardson and Bowron, 1985
	surface water	~1	ug/l			Germany	Watts et al. 1983 cited in Stan and Heberer, 1997
	surface water	0.14	95th %ile (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	0.03 (<0.02-0.48)	ug/l (median, range of 52)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	max 0.48	ug/l	rivers	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	waste water effluent	0.40 (<0.02-2.0)	ug/l (median, range of 10)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	waste water effluent	0.9	ug/l (90th %ile of 10)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	ground water	5	mg/ml (max)	ground water down gradient of landfill		Denmark	Holm et al, 1995; Cited in Halling-Sorensen et al, 1998
terbutaline	landfill leachate	0.04-6.47	mg/l	landfill leachate		Germany	Holm et al, 1995; Cited in Daughton and Temes, 1999
	surface water	<0.003 - 0.009	ug/l			Germany	Hirsch et al. 1998 cited in Stan and Heberer, 1997
	surface water	< 0.01	ug/l	surface water		Germany	Temes, 1998

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terbutaline	waste water	<0.025 - 0.115	ug/l			Germany	Hirsch et al. 1996
	waste water effluent	0.12	ug/l (max)	waste water effluent		Germany	Temes, 1998
testosterone	feces	detected		chicken manure			Shore et al, 1988; Cited in Halling-Sorensen et al, 1998
	raw sewage	0.8-1.1	nmol/l	raw sewage		Israel	Shore et al, 1993; Cited in Halling-Sorensen et al, 1998
tetrahydrocannabinol	waste water	ave 0.02	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.00 - 0.03	ug/l	raw sewage	TLC/GLC	USA	Tabak et al. 1981
	waste water	0.00 - 0.02	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
	waste water	ave <0.01	ug/l	treated effluent	TLC/GLC	USA	Tabak et al. 1981
tetrabromo-o-cresol	sewage effluent	max 0.030	ug/l	max value sewage effluent n= 82 from 49 STP	solid phase extraction, GC/MS analysis	Germany	Temes, Stumpf et al. 1998
	surface water	max 0.015	ug/l	16 rivers.n=31	GC/MS	Germany	Temes et al. 1998
	waste water	max 0.03	ug/l	STP discharges	GC/MS	Germany	Temes et.al. 1998
tetracycline	ground water	<0.05	ug/l (n=37)		HPLC-ESI-MS/MS	Germany	Hirsch et al, 1999
	sewage effluent	<0.05	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et.al. 1999
	surface water	1	ug/l	river	field desorption MS and HPLC		Watts et al, 1983; Cited in Halling-Sorensen et al, 1998
	surface water	~1	ug/l	river water	GC/MS	England	Richardson and Bowron, 1985
	surface water	~1	ug/l			Germany	Watts et al. 1983 cited in Stan and Heberer, 1997
	surface water	<0.05	ug/l (n=14)		HPLC-ESI-MS/MS	Germany	Hirsch et al, 1999
	waste water effluent	<0.05	ug/l (n=5)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
theophylline	surface water	1	ug/l	river	field desorption-MS and HPLC		Watts et al, 1983; Cited in Halling-Sorensen et al, 1998
	surface water	~1	ug/l	river water	GC/MS	England	Richardson and Bowron, 1985
	surface water	~1	ug/l			Germany	Watts et al. 1983 cited in Stan and Heberer, 1997
timolol	surface water	<0.003 -0.010	ug/l	river water n= 24	GC/MS	Germany	Hirsch et al. 1996
	surface water	0.01	ug/l (max)	surface water		Germany	Temes, 1998

<i>chemical</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>country</i>	<i>reference</i>
timolol	waste water	<0.025 - 0.069	ug/l	wastewater n=25 WTP	GC/MS	Germany	Hirsch et al. 1996
	waste water effluent	0.07	ug/l (max)	waste water effluent			Temes, 1998
tolfenamic acid	sewage effluent	max > 1	ng/l	10 Brazilian STPs	SPE GC/MS	Brazil	Stumpf, Temes et al. 1999
	surface water	< 0.01	ug/l	surface water			Temes, 1998
	waste water effluent	< 0.05	ug/l	waste water effluent			Temes, 1998
	waste water influent	1.6	ug/l	waste water influent			Stumpf et al. 1999; Cited in Daughton and Temes, 1999
triclosan	surface water	0.05-0.15	ug/l	surface water			Okimura and Nishikawa, 1996; Cited In Daughton and Temes, 1999
trimethoprim	ground water	<0.02	ug/l (range of 59)		HPLC:ESI-MS/MS	Germany	Hirsch et al, 1999
	PEC	170	ng/l	calculated based on use data - degrad considered			Halling-Sorensen et al, 2000
	PECmax	170	ng/l	calculated based on use data; no degradation		Europe	Halling-Sorensen et al, 2000
	sewage effluent	max 0.66	ug/l	sewage effluent	HPLC-electrospray-tandem-MS	Germany	Hirsch, Temes, Haberer, et al. 1999
	surface water	<0.05-0.2	ug/l (range of 52)				Hirsch et al, 1999
	surface water	0.09	95th %ile (n=14)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	surface water	max 0.2	ug/l	rivers			Hirsch, Temes, Haberer, et al. 1999
	waste water effluent	6.2	ug/l (90th %ile of 10)		HPLC ESI-MS/MS	Germany	Hirsch et al, 1999
	waste water effluent	0.32 (<0.02-0.66)	ug/l (median, range of 10)				Hirsch et al, 1999

Table 10: Summary of Effects Data

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<i>chemical</i>	<i>data type</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
(-)limonene	effect	teratogenicity- chicks	OTD 1	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
(+)-limonene	effect	teratogenicity- chicks	OTD 1	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
[S,S]-EDDS	acute effects - aquatic	EC50	0.28	mg/l	Algae Chlorella vulgaris	OECD 201	Jaworska et al, 1999
	acute effects - aquatic	EC50	>100	mg/l	Algae Selenestrum copricomutum	short term photosynthesis inhibition test	Jaworska et al, 1999
	acute effects - aquatic	EC50	>1000	mg/l	daphnia - immobilization	OECD 202	Jaworska et al, 1999
	acute effects - aquatic	LC50	>1000	mg/l	fish - Brachydanio rerio; 96 hr	OECD 203	Jaworska et al, 1999
	acute effects - terrestrial	EC50	>1000	mg/kg soil	plant - A. sativa	OECD 208	Jaworska et al, 1999
	acute effects - terrestrial	EC50	833	mg/kg soil	plant - L. esculentum	OECD 208	Jaworska et al, 1999
	acute effects - terrestrial	EC50	219	mg/kg soil	plant - L. sativa	OECD 208	Jaworska et al, 1999
	acute effects - terrestrial	LC50	115	mg/kg soil	earthworm - 14 d	OECD 207	Jaworska et al, 1999
	chelation	NOEC	see paper				Jaworska et al, 1999
	subchronic effects - aquatic	NOEC	0.125	mg/l	Algae Chlorella vulgaris	OECD 201	Jaworska et al, 1999
	subchronic effects - aquatic	NOEC	32	mg/l	daphnia - 21 d	similar to OECD 202	Jaworska et al, 1999
	subchronic effects - aquatic	NOEC	61	mg/l	fish - Brachydanio rerio; 21 d	OECD 210	Jaworska et al, 1999
4-amino:musk xylene- (musk_nitro metabolite)	acute effects - aquatic	EC50	0.25	ug/l	crustacean - daphnia		Becht et al, 1998; Cited in Daughton and Temes, 1999
acetaminophen	acute effects - aquatic	EC50 - Daphnia magna	0.25	ug/l			Henschel et al, 1997
	acute effects - aquatic	EC50	134	mg/l	algae	OECD 201: 72 h	Henschel et al, 1997
	acute effects - aquatic	EC50	650	mg/l	bacteria - luminescence	DIN guideline 38412 L34; 30 min	Henschel et al, 1997
	acute effects - aquatic	EC50	112	mg/l	ciliates - Tetrahymena pyriformis	OECD draft; 48h	Henschel et al, 1997
	acute effects - aquatic	EC50	0.27-0.90	mM	crustacean - daphnia - immobilization		Lillius et al, 1995; Cited in Daughton and Temes, 1999
	acute effects - aquatic	EC50	136	mg/l	Daphnia - 24 h test		US EPA, 1999; Cited in Stuer-Lauridsen et al, 2000

chemical	data type	descriptor	value	units	test matrix	method/parameters	reference
acetaminophen	acute effects - aquatic	EC50	9.2	mg/l	Daphnia - 48 h test		US EPA, 1999; Cited in Stuer-Lauridsen et al, 2000
	acute effects - aquatic	EC50	50	mg/l	daphnia - immobilization	OECD 202	Henschel et al, 1997
	acute effects - aquatic	EC50	378	mg/l	fish - zebra fish - mortality	fish embryo test, 48h (Schulte and Nagel, 1994)	Henschel et al, 1997
	acute effects - aquatic	EC50	820	mg/l	fish - zebra fish - pulse rate	fish embryo test reduction in pulse rate >=40% is lethality (Schulte and Nagel, 1994)	Henschel et al, 1997
	acute effects - aquatic	EC50	19	mg/l	fish:cells in vitro	bluegill sunfish cells in culture - cytotox and inhib of prolif	Henschel et al, 1997
	acute effects - aquatic	LC50	29.6	mg/l	S. proboscideu - 24 h test		US EPA, 1999; Cited in Stuer-Lauridsen et al, 2000
	estrogenic effects	fish			sewage effluent		Purdom et al. 1994 cited in Crisp et al. 1998
alkylphenol-polyethoxylates-(APE) aluminum	effect	chronic toxicity - mammals/human					IPCS, 1997 cited in Aluminum in Drugs by NDMAC and CCTFA, January 19, 2000
	effect	LD50 -oral	222 to 980	mg/kg bw	mammalian		IPCS, 1997 cited in Aluminum in Drugs by NDMAC and CCTFA, January 19, 2000
	amitriptyline	acute effects - aquatic	EC50	5.0	mg/l	crustacean - daphnia	Lillius et al, 1995; Cited in Halling-Sorensen et al, 1998
ampicillin	antibiotic resistance		>100	mg/l	sediment:bacteria - Vibri Harveyi	growth rate	Sandas et al, 1992; Cited in Halling-Sorensen et al, 1998
amprolium	antimicrobial effects	NEL	204	ug/g manure	nitrifying bacteria in manure		Waman, 1980; Cited in Halling-Sorensen et al, 1998
ASA	acute effects - aquatic	EC50	0.9-8.2	mM	crustacean - daphnia - immobilization		Lillius et al, 1995; Cited in Daughton and Temes, 1999
	subchronic effects - aquatic	EC50	61-68	mg/l	Daphnia - 21 d study	reproduction	US EPA, 1999; Cited in Stuer-Lauridsen,et al, 2000
aureomycin	antimicrobial effects	NEL	22.5	ug/g manure	nitrifying bacteria in manure		Waman, 1980; Cited in Halling-Sorensen et al, 2000
bacitracin	acute effect - aquatic	LC50	34	mg/l	Artemia salina 24 h		Miclo et al 1997 Cited in Halling-Sorensen et al 1998
	acute effect - aquatic	LC50	21.8	mg/l	Artemia salina 48h		Miclo et al 1997 Cited in Halling-Sorensen et al. 1998
	acute effect - aquatic	LC50	30	mg/l	Daphnia 48 h		Miclo et al. 1997 Cited in Halling-Sorensen et al. 1998
	acute effect - aquatic	LC50	128	mg/l	Daphnia magna 24 h		Brambillia et al. 1994 Cited in Halling-Sorensen et al. 1998
	acute effect-aquatic	EC50	128	mg/l	Daphnia magna 24h		DiDelupis et al 1992 Cited in Halling-Sorensen et al. 1998
	acute effect-aquatic	EC50	30	mg/l	Daphnia magna 48h		DiDelupis et al 1992 Cited in Halling-Sorensen et al. 1998

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bacitracin	acute effect-aquatic	LOEC	-5	mg/l	Daphnia magna		DiDelupis et al 1992 Cited in Halling-Sorensen et al. 1998
benzaldehyde	effect	teratogenicity- chicks	OTD 1	M	chick embryos 3rd day devel	inject suprablastodermically single-dose dissolved in olive oil	Abramovici and Rachmuth-Rolzman, 1983
benzylpenicillin	effect	growth inhibition - algae	0.006	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
	effect	growth inhibition - algae	100	mg/l	NOEC green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
bisphenol-A	effect	immune modulation					Ansar Ahmed, 2000
	reproduction	no effects	0.5	mg/d	treated from day 2-12	rats-pubertal spermatogenesis, testes size and fertility	Atanassova et al., 2000
bromocyclen	acute effects - aquatic	EC10	>100	mg/l	algae		Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	EC50	>100	mg/l	algae		Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC10	0.4	mg/l	crustacean - daphnia	acute toxicity	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC10	0.084	mg/l	crustacean - daphnia - reproduction		Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	0.7	mg/l	crustacean - daphnia	acute toxicity	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	0.353	mg/l	crustacean - daphnia - reproduction		Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NOEC	0.1	mg/l	crustacean - daphnia - reproduction		Kopf, 1995; Cited in Halling-Sorensen et al, 1998
chloramphenicol	acute effects - aquatic	EC50	0.16	mg/l	sediment bacteria - <i>Vibrio harveyi</i>		Thomulka et al, 1993; Cited in Halling-Sorensen et al, 1998
chlorotetracycline	acute effects - terrestrial	effect level	18	mg/l	manure - pig - inhibition of anaerobic digestion		Fedler and Day, 1985; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	effect level	<160	ppm	plant - pinto beans - growth reduced		Batchelder, 1981; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	effect level	<160	ppm	plant - radish - growth stimulation + N uptake		Batchelder, 1982; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	lethal level	160	ppm	plant - pinto beans - growth reduced; all plants died		Batchelder, 1981; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	no effects	not stated		soil amended with poultry manure; no effect on soil biot activity		Warman and Thomas, 1981; Cited in Halling-Sorensen et al, 1998
	effect	growth inhibition - algae	0.05	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
	effect	growth inhibition - algae	3.1	mg/l	EC50 green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
CI Pigment 57:1	mutagenicity	mutagenicity	-		Ames test (weak response in TA98)		Moller and Wallin, 2000

<i>chemical</i>	<i>data type</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
CI Pigment 57:1	toxicity	rats- oral gavage	+		reversible enlargement of kidney and changes to kidney tubules in male and female rats		Leist 1982 cited in Moller and Wallin, 2000
CI Pigment Red 2	mutagenicity	mutagenicity	-		Ames test		Moller and Wallin, 2000
CI Pigment Red 23	genotoxicity	SCE	+				Moller and Wallin, 2000
CI Pigment Red 3	carcinogenicity	animals	limited evidence				Moller and Wallin, 2000
	toxicity-oral	rodent	hemolytic anemia				Morgan et al. 1989 cited in Moller and Wallin, 2000
CI Pigment Red 53:1	carcinogenicity	humans	not classifiable				Moller and Wallin, 2000
	toxicity	humans	"low potential risk"				Moller and Wallin, 2000
CI Pigment Red 64:1	carcinogenicity	mice	-		skin painting		Moller and Wallin, 2000
	mutagenicity	mutagenicity	-				Moller and Wallin, 2000
CI Solvent Yellow 14	carcinogenicity	oral	unclassifiable		human		Moller and Wallin, 2000
	genotoxicity	dna adducts	+				Moller and Wallin, 2000
	mutagenicity	subcutaneous admin.	+/-		Ames and mammalian mouse lymphoma assay		Moller and Wallin, 2000
cinnamaldehyde	effect	teratogenicity- chicks	OTD 0.02	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
cinnamyl alcohol	effect	teratogenicity- chicks	OTD 0.2	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
ciprofloxacin	acute effects - aquatic	EC50	2.97	mg/l	algae - <i>S. capricornutum</i>	OECD 201	Halling-Sorensen et al, 2000
	acute effects - aquatic	EC50	0.61	mg/l	bacteria from activated sludge	ISO 15522	Halling-Sorensen et al, 2000
	acute effects - aquatic	EC50	0.005	mg/l	cyanobacteria - <i>M. aeruginosa</i>	ISO 15522?	Halling-Sorensen et al, 2000
	acute effects - aquatic	NOEC	60	mg/l	daphnia 48h	OECD 202	Halling-Sorensen et al, 2000
	acute effects - aquatic	NOEC	100	mg/l	fish- zebra fish 72h	OECD 203	Halling-Sorensen et al, 2000
	acute effects - aquatic	PNEC	0.00005	mg/l	calculated based on lowest EC50 (mecillinam data)		Halling-Sorensen et al, 2000
	effect	genotoxicity	0.2 - 0.4	ug/l	genotoxicity	SOS chromotest	Kummerer et al. 2000
cisplatin	genotoxicity	mutation	positive		bacteria	umu C test on hospital waste water	Guilliana et al, 1996; Cited in Halling-Sorensen et al, 2000
citral	effect	teratogenicity- chicks	OTD 0.05	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
citronellal	effect	teratogenicity- chicks	OTD 0.2	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
clofibrate	acute effects - aquatic	EC10	5.4	mg/l	algae; growth inhib		Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	EC50	12	mg/l	algae; growth inhib		Kopf, 1995; Cited in Halling-Sorensen et al, 1998

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clofibrate	acute effects - aquatic	LC10	17.7	mg/l	crustacean - daphnia	acute toxicity	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC10	0.0084	mg/l	crustacean - daphnia; reproduction	reproduction	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	28.2	mg/l	crustacean - daphnia	acute toxicity	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	0.106	mg/l	crustacean - daphnia; reproduction	reproduction	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NOEC	0.01	mg/l	crustacean - daphnia; reproduction	reproduction	Kopf, 1995; Cited in Halling-Sorensen et al, 1998
clofibric acid	acute effects - aquatic	EC50	89	mg/l	algae	OECD 201	Henschel et al, 1997
	acute effects - aquatic	EC50	100	mg/l	bacteria - luminescence	DIN guideline 38412 L34	Henschel et al, 1997
	acute effects - aquatic	EC50	175	mg/l	ciliates - Tetrahymena pyriformis	Pauli, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	106	mg/l	daphnia - immobilization	OECD 202	Henschel et al, 1997
	acute effects - aquatic	EC50	88	mg/l	fish - zebra fish - mortality	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	126	mg/l	fish - zebra fish - pulse rate	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	14	mg/l	fish cells in vitro	bluegill sunfish cells in culture - cytotox and inhib of prolif	Henschel et al, 1997
corticosterone	estrogenic effects	vitellogenin production	-		160 umol/100g injection Japanese quail	immunolectrophoresis	Robinson and Verrinder Gibbins, 1984
croton aldehyde	effect	teratogenicity- chicks	OTD 0.005	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
cyclophosphamide	carcinogenicity		carcinogenic				Daughton and Ternes, 1999
	mutagenicity		mutagenic				Daughton and Ternes, 1999
DEA	effect	acute toxicity - LC50 24 h fish	80	mg/l	Carassius auratus	static, measured conc., pH 10.1	Bridie et al., 1979b cited in Davis and Carpenter, 1997
	effect	acute toxicity - LC50 48 h	116; 306	mg/l	Daphnia magna	static, unmeasured conc.	Gersich et al., 1985 and Cowgill and Milazzo, 1991 cited in Davis and Carpenter, 1997
	effect	acute toxicity - LC50 96 h fish	1480	mg/l	fathead minnow fry	static, unmeasured conc.	Mayes et al. 1983 cited in Davis and Carpenter, 1997
	effect	chronic toxicity - aquatic invertebrate	3.5	mg/l	Daphnia magna 3 brood test	static, unmeasured conc.	Cowgill and Milazzo, 1991 cited in Davis and Carpenter, 1997
	effect	growth inhibition - algae	3.3; 4.4	mg/l	algal population growth:3% decrease 7d; EC50:96 h		Bringmann and Kuhn, 1980 and Dill et al. 1982, cited in Davis and Carpenter, 1997
diazepam	acute effects - aquatic	EC50	0.015-0.049	µM	crustacean - daphnia - immobilization		Liljus et al, 1995; Cited in Daughton and Ternes, 1999
	acute effects - aquatic	LC50	4.3	mg/l	crustacean - daphnia		Calleja et al, 1993; Cited in Halling-Sorensen et al, 1998

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diazepam	acute effects - aquatic	LC50	13.9	mg/l	crustacean - daphnia		Lillius et al, 1995; Cited in Halling-Sorensen et al, 1998
diethylstilbestrol	acute effects - aquatic	LC50	4	mg/l	crustacean - daphnia		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	4	mg/l	Culex pipiens		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>1	mg/l	fish - <i>Gambusia affinis</i>		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>10	mg/l	<i>Physa. Sp.</i>		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	EC50	>10	mg/l	algae		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
diethylstilbestrol acetate	acute effects - aquatic	LC50	10	mg/l	crustacean - daphnia		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>10	mg/l	Culex pipiens		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>10	mg/l	fish - <i>Gambusia affinis</i>		Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>10	mg/l			Coats et al, 1976; Cited in Halling-Sorensen et al, 1998
digoxin	acute effects - aquatic	EC50	21.2	mg/l	Daphnia - 24 h test		US EPA, 1999; Cited in Stuer-Lauridsen et al, 2000
dimethyl octanol	effect	teratogenicity-chicks	OTD 0.5	M	chick embryos 3rd day devel	Inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rechmuth-Roizman, 1983
DK	toxicity	uncouple oxidative phosphorylation	y		liver and brain mitochondria		Cammer, 1980
DPTA	acute effects - aquatic	EC50	125,000	mg/l	bacteria - <i>Photobacterium phosphoreum</i> - Ca/Na salt - 15 min		Sillanpaa and Oikari, 1998b; Cited in Sillanpaa, 1997
	acute effects - aquatic	EC50	120,000	mg/l	Daphnia - Ca/Na salt - 24 h		Srivastava et al, 1986; Cited in Sillanpaa, 1997
	acute effects - aquatic	LC50	245	mg/l	Daphnia carinata - acid buffered to pH 7 - 2d		van Dam et al, 1996; Cited in Sillanpaa, 1997
	acute effects - aquatic	LOEC	1	mg/l	<i>Selenestrum capricornutum</i>		Verschueren, 1983; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	LC50	1115	mg/l	fish - sunfish - Na salt - 4 d		Batchelder et al, 1980; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	LOEC	10	mg/l	Daphnia carinata - acid buffered to pH 7 - 6d		van Dam et al, 1995; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	NOEC	1	mg/l	Daphnia carinata - acid buffered to pH 7 - 6d		van Dam et al, 1995; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	NOEC	750	mg/l	fish - sunfish - Na salt - 4 d		Batchelder et al, 1980; Cited in Sillanpaa, 1997
Zulderveen and Birge	subchronic effects - aquatic	threshold	1.41	mg/l	<i>Ceriodaphnia dubia</i> - 21 d reproduction study		Zulderveen and Birge; Cited in Sillanpaa, 1997

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DPTA	subchronic effects - lab animal	LD50	587	mg/kg bw	rat - 14 d - ip injection study		Srivastava et al, 1986; Cited in Sillanpaa, 1997
EDTA	acute effects - aquatic	EC50	3170	mg/l	bacteria - Photobacterium phosphoreum - Na salt - 15 min		Sillanpaa and Olkari, 1996b; Cited in Sillanpaa, 1997
	acute effects - aquatic	EC50	1033	mg/l	Daphnia - 24 h - Na salt		Bringmann and Kuhn, 1978; Cited in Sillanpaa, 1997
	acute effects - aquatic	EC50	610	mg/l	Daphnia - Na salt - 24 h		Srivastava et al, 1986; Cited in Sillanpaa, 1997
	acute effects - aquatic	LC50	159	mg/l	fish - sunfish - acid form - 96 h		Batchelder et al, 1980; Cited in Sillanpaa, 1997
	acute effects - aquatic	LC50	486	mg/l	fish - sunfish - sodium salt - 96 h		Batchelder et al, 1980; Cited in Sillanpaa, 1997
	acute effects - aquatic	NOEC	100	mg/l	fish - sunfish - acid form - 96 h		Batchelder et al, 1980; Cited in Sillanpaa, 1997
	acute effects - aquatic	NOEC	870	mg/l	fish - sunfish - sodium salt - 96 h		Batchelder et al, 1980; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	LC50	60	mg/l	fish - <i>Pimephales promelas</i> - acid - 4 d		Curtis and Ward, 1981; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	threshold	7.07	mg/l	<i>Ceriodaphnia dubia</i> - 21 d reproduction test		Zuiderveen and Birge; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	threshold	76	mg/l	<i>Microystis aeruginosa</i> - Na salt 10 d		Bringmann and Kuhn, 1978; Cited in Sillanpaa, 1997
	subchronic effects - aquatic	threshold	11	mg/l	<i>Scenedesmus quadriculata</i> - Na salt - 10 d		Bringmann and Kuhn, 1978; Cited in Sillanpaa, 1997
	subchronic effects - lab animal	LD50	513	mg/kg bw	rat - 14 d - ip injection study		Srivastava et al, 1986; Cited in Sillanpaa, 1997
estradiol	estrogenic effects	fathead minnows - male	> 100	ng/l	significant increase in plasma vitellogenin	radioimmunoassay	Panter et al. 1998
	estrogenic effects	fathead minnows - male	320 and 1000	ng/l	significant reduction in gonad somatic index (GSI)		Panter et al. 1998
	estrogenic effects	vitellogenin production	16	nmol/100g	injection - Japanese quail	immunolectrophoresis	Robinson and Verninder Gibbins, 1984
estrogen	acute effects - aquatic	LC50	1.09	mg/l	Daphnia - 48 h test		US EPA, 1999; Cited in Stuer-Lauridsen et al, 2000
	acute effects - aquatic	LC50	4.2	mg/l	Daphnia - active ingred only - no details		Calleja et al, 1993; Cited in Stuer-Lauridsen et al, 2000
	acute effects - aquatic	LC50	14.1	mg/l	Daphnia - whole product - no details		Calleja et al, 1993; Cited in Stuer-Lauridsen et al, 2000
	subchronic effects - plants	increased growth	0.005-0.537	mg/l	<i>M. sativa</i> - no details		Shore et al, 1992; Cited in Stuer-Lauridsen et al, 2000
	subchronic - terrestrial	increased growth	0.02-2	nmol/l	alfalfa plants		Shore et al. 1992 Cited in Halling-Sorenson et al. 1998
estrone	estrogenic effects	fathead minnows - male	> 31.8	ng/l	significant increase in plasma vitellogenin		Panter et al. 1998

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estrone	estrogenic effects	fathead minnows - male	317.7	ng/l	significant reduction in gonad somatic index (GSI)		Panter et al. 1998
ethinyl estradiol	acute effects - aquatic	EC10	0.054	mg/l	algae		Kopf, 1995; Cited in Halling-Sorensen et al. 1998
	acute effects - aquatic	EC10	3.2	mg/l	crustacean - daphnia	acute toxicity	Kopf, 1995; Cited in Halling-Sorensen et al. 1998
	acute effects - aquatic	EC50	0.84	mg/l	algae		Kopf, 1995; Cited in Halling-Sorensen et al. 1998
	acute effects - aquatic	EC50	5.7	mg/l	crustacean - daphnia	acute toxicity	Kopf, 1995; Cited in Halling-Sorensen et al. 1998
	acute effects - aquatic	EC50	0.105	mg/l	crustacean - daphnia; reproduction		Kopf, 1995; Cited in Halling-Sorensen et al. 1998
	acute effects - aquatic	NOEC	0.01	mg/l	crustacean - daphnia; reproduction		Kopf, 1995; Cited in Halling-Sorensen et al. 1998
	chronic effects - aquatic	estrogenic effects	suspected to cause estrogenic effects in fish				Daughton and Ternes, 1999
	effect - fish	reproduction	10	ng/l	increased vitellogenin levels		Purdom et al. 1994 cited in Arcand-hoy et al. 1998
	effect - fish	reproduction	2	ng/l	induced vitellogenin and inhibit testicular growth in male rainbow trout		Jobling et al. 1998 cited in Arcand-hoy et al. 1998
		estrogenic effects			sewage effluent		Purdom et al. 1994 cited in Crisp et al. 1998
	estrogenic effects	rainbow trout - juvenile	+		caged-fish downstream of sewage treatment works for 2 weeks.	vitellogenin synthesis determined ELISA and Western Blot	Larsson et al. 1999
	estrogenic effects	vitellogenin production	16	nmol/100g	injection - Japanese quail	immunolectrophoresis	Robinson and Verrinder Gibbins, 1984
	estrogenic effects	vitellogenin production	1	ng/l	male fish		Purdom et al. 1994 cited in Sumpter, 1995
	subchronic effects - aquatic	EC10	0.0125	mg/l	crustacean - daphnia; reproduction		Kopf, 1995; Cited in Halling-Sorensen et al. 1998
farnesal	effect	teratogenicity - chicks	OTD 0.2	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
farnesol	effect	teratogenicity - chicks	OTD 0.5	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
fenfluramine hydrochloride	effect - reproduction	crustacean - testes development	stimulated by release of gonad-stimulating hormone		fiddler crabs - male	1.25 10E-7M per crab (25 ul inject); dose dependent development of testes	Sarojini et al. 1993
	effect - reproduction	crustacean-ovarian development	stimulated ovarian development		red swamp crayfish - female	15 ug/g body weight injection	Kulkami et al. 1992
flumequine	acute effects - aquatic	LC50	477	mg/l	crustacean - Artemia salina - 24 h		Brambila et al. 1994; Cited in Halling-Sorensen et al. 1998

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flumequine	acute effects - aquatic	LC50	308	mg/l	crustacean - Artemia salina - 48 h		Migliore et al, 1997; Cited in Helling-Sorensen et al, 1998
	acute effects - aquatic	LC50	96	mg/l	crustacean - Artemia salina - 72 h		Migliore et al, 1997; Cited in Helling-Sorensen et al, 1998
	acute effects - terrestrial	effects	not stated		plant - weight reduction		Brambilla et al, 1994; Cited in Helling-Sorensen et al, 1998
	antimicrobial effects	MBC	2048	ug/l	bacteria - Aeromonas salmonicida - 24 h - tryptone plus sea water ion	min. bactericidal conc.	Purcell et al, 1995; Cited In Helling-Sorensen et al, 1998
	antimicrobial effects	MBC	16	ug/l	bacteria - Aeromonas salmonicida - 24 h - tryptone soya broth		Purcell et al, 1995; Cited.In Helling-Sorensen et al, 1998
	antimicrobial effects	MBC	256	ug/l	bacteria - Aeromonas salmonicida - 72 h - tryptone plus sea water ion		Purcell et al, 1995; Cited in Helling-Sorensen et al, 1998
	antimicrobial effects	MBC	32	ug/l	bacteria - Aeromonas salmonicida - 72 h - tryptone soya broth		Purcell et al, 1995; Cited in Helling-Sorensen et al, 1998
	antimicrobial effects	MIC	128	ug/l	bacteria - Aeromonas salmonicida - 24 h - tryptone plus sea water ion	min. inhibitory conc.	Purcell et al, 1995; Cited in Helling-Sorensen et al, 1998
	antimicrobial effects	MIC	4	ug/l	bacteria - Aeromonas salmonicida - 24 h - tryptone soya broth		Purcell et al, 1995; Cited in Helling-Sorensen et al, 1998
	antimicrobial effects	MIC	16	ug/l	bacteria - Aeromonas salmonicida - 72 h - tryptone soya broth		Purcell et al, 1995; Cited in Helling-Sorensen et al, 1998
	antimicrobial effects	MIC	256	ug/l	bacteria - Aeromonas salmonicida - 72 h - tryptone soya plus sea water ion		Purcell et al, 1995; Cited in Helling-Sorensen et al, 1998
fluoxetine	effect	phytotoxicity - aquatic weed	5000 to 50	ug/l	concentrations induced hormesis in <i>Lythrum salicaria</i> (aquatic weed)	increased mean no. and dimension of leaves and secondary roots	Migliore et al. 2000
	effect	phytotoxicity - aquatic weed	100	mg/l	toxic to <i>L. salicaria</i> post-germinative development - after 10 day exposure		Migliore et al. 2000
	effect	crustacean - behaviour aggression	10-5	M	crayfish, lobster	via injection conc. in hemolymph of crayfish and lobster	Huber et al. 1997
	effect-reproduction	crustacean - testes development	stimulated by release of gonad-stimulating hormone		fiddler crabs - male	dose dependent stimulation of testes development; 1.25 x 10E-7 M (25 ul inject)	Sarojini et al. 1993
	effect-reproduction	crustacean-ovarian development	stimulated ovarian development		red swamp crayfish - female	15 ug/g body weight injection	Kulkarni et al. 1992
	effects	gastropod:mollusc:(mud snail)	1	uM	Induced metamorphosis in exposed larvae		Couper et al. 1996

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fluoxetine	reproductive effects	did not induce parturition	1-100	uM	fingernail clam; Fluoxetine at 5 uM potentiated parturition in subthreshold serotonin conc.	10 ml test soln, one clam per vial, 9.0 ml spring water and 0.1% ETOH + fluoxetine, observe for 4 h for release of juvenile clams; release of at least one extra-marsupial larva equals positive response	Fong et al, 1998b
	reproductive effects	effect level	5 x 10E-6	M	zebramussels - female - signif induction of spawning		Fong, 1998a
	reproductive effects	effect level (100%); significant	5x10E-6; 10E-7 (~150 ug/l)	M	zebramussels - male - induction (100%) in spawning		Fong, 1998a
	reproductive effects	inhibit 5-HT receptors in oocytes			Xenopus: oocytes		Ni and Miledi, 1997 cited in Fong et al. 1998b
fluvoxamine	reproduction	gamete viability	< 10E-5	M	zebramussel gametes spawned in fluvoxamine; gamete viability		Fong, 1998a
	reproductive effects	effect level	125	nmol	molluscs - fiddler crab - increased production of gonad stimulating hormone		Sarojini et al, 1993; Cited in Daughton and Temes, 1999
	reproductive effects	effect level	0.318	ug/l	molluscs - fingernail clams - induced parturition		Fong et al, 1998; Cited in Daughton and Temes, 1999
	reproductive effects	effect level	0.318	ug/l	molluscs - fingernail clams - potentiated effect of 5-HT 5-fold		Fong et al, 1998; Cited in Daughton and Temes, 1999
	reproductive effects	effect level	10E-5 to 10E-6	M	zebramussels - female - induction (100%) of spawning		Fong, 1998a
	reproductive effects	effect level	10E-5 to 10E-6	M	zebramussels - male - induction (100%) of spawning		Fong, 1998a
	reproductive effects	induced parturition	0.01 - 100	uM	fingernail clam	10 ml test soln, one clam per vial, 9.0 ml spring water and 0.1% ETOH + fluvoxamine, observe for 4 h for release of juvenile clams; release of at least one extra-marsupial larva equals positive response	Fong et al, 1998b
furazolidone	acute effects - aquatic	EC50	1.3	mg/l	algae - Chlorella		Canton and van Esch, 1978; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>30	mg/l	crustacean - daphnia		Canton and van Esch, 1978; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	25	mg/l	fish - guppy		Canton and van Esch, 1978; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	>30	mg/l	fish - salmo gairdneri		Canton and van Esch, 1978; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Nygaard, et al, 1992; Cited in Halling-Sorensen et al, 1998
geraniol	effect	teratogenicity- chicks	OTD 0.15	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
hydroquinone	effect	carcinogenicity	?				Devillers et al., 1990

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hydroquinone	effect	EC50 - bacteria	0.038 -110	mg/l	effect on photoluminescence, cell multiplication, and dehydrogenase activity		Ribo and Kaiser, 1983 cited in Devillers et al., 1990; Stom et al., 1986; and Devillers et al. 1990
	effect	EC50 - Daphnia magna	0.12-11.4	mg/l	24h mobility 50%		Bringmann and Kuhn, 1982; IRCHA 1981; Tissot et al., 1985; Devillers et al., 1987 - cited in Devillers et al., 1990
	effect	EC50 - plant	42.9	mg/l	50% inhibition of growth in 9 days -Elodea canadensis		Stom and Roth, 1981 cited in Devillers et al., 1990
	effect	EC50 - plant	7.71	mg/l	50% inhibition of plant multiplication in 12 d -Lemna minor		Stom and Roth, 1981 cited in Devillers et al., 1990
	effect	EC50-dinoflagellate	0.3	mg/l	immobilization in 2 h		Devillers et al. 1990
	effect	EC50-yeast	1000-3750	mg/l	50% inhibition of growth in 24 h		Devillers et al. 1990
	effect	genotoxicity	+		SCE		Devillers et al. 1990
	effect	immunotoxicity	+		in vitro, in vivo and occupational allergic responses observed		Devillers et al. 1990
	effect	inhibition motility - algae	55 -7708	mg/l	100% inhibition in 15 min		Stom and Roth, 1981 cited in Devillers et al., 1990
	effect	LC100 - fish	5	mg/l	100% mortality exposure 22 h - Lepomis macrochirus		EPA 1987 cited in Devillers et al. 1990
	effect	LC100-fish	5	mg/l	100 % mortality exposure 22 h -Salmo trutta		EPA 1987 cited in Devillers et al. 1990
	effect	LC100-fish	7.69 and 4.5	mg/l	100% mortality exposure 2 h and 4 h - rainbow trout		Devillers et al. 1990
	effect	LC100-fish	5	mg/l	100% mortality exposure 22 h -Carassius auratus		EPA 1987 cited in Devillers et al. 1990
	effect	LC50 - Daphnia magna	0.09	mg/l	24h mortality 50%		Bringmann and Kuhn, 1977b cited in Devillers et al., 1990
	effect	LC50 - fish	0.15; 0.18	mg/l	48 h mortality 50% Leuciscus idus melanotus		Juhnke and Ludemann, 1978 cited in Devillers et al., 1990
	effect	LC50 - fish	0.97	mg/l	96 h mortality 50% rainbow trout		DeGraeve et al., 1980 cited in Devillers et al., 1990
	effect	LC50 - fish	0.639	mg/l	96 h mortality 50% rainbow trout		Hodson et al., 1984 cited in Devillers et al., 1990
	effect	LC50- Artemia salina	20.7	mg/l	24 h mortality 50%		Devillers et al., 1990
	effect	LC50-fish	0.265	mg/l	24 h mortality 50% Brachydanio rerio		Devillers et al., 1988 cited in Devillers et al., 1990
	effect	LC50-fish	0.17	mg/l	96 h mortality 50% Brachydanio rerio		Wellens, 1982 cited in Devillers et al., 1990
	effect	LC50-fish	0.044	mg/l	96 h mortality 50% Pimephales promelas		DeGraeve et al., 1980 cited in Devillers et al., 1990

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hydroquinone	effect	LD50 - cat	70	mg/kg	oral exposure		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	LD50 - dog	200	mg/kg	oral exposure		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	LD50 - guinea pig	550	mg/kg	oral exposure		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	LD50 - insect	0.2	mg/l	24 h. mortality 50% (bee)		Devilliers et al., 1990
	effect	LD50 - rabbit	125	mg/kg	ipr		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	LD50 - rat	320	mg/kg	oral exposure		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	LD50- mouse	245	mg/kg	oral exposure		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	LD50 -pigeon	300	mg/kg	oral exposure		Anonymous, 1988 cited in Devilliers et al., 1990
	effect	Lowest effect - no growth of algae	0.316 - 79.4	mg/l	no growth in 14 days (irradiance of 2 W/m2)		Wangberg and Blanck, 1988 cited in Devilliers et al., 1990
	effect	Lowest effect - no growth of bluegreen algae		mg/l	no growth in 14 days (irradiance of 2 W/m2)		Wangberg and Blanck, 1988 cited in Devilliers et al., 1990
	effect	LT50 - Crangon septemspinosa mortality- mollusc	0.83	mg/l	84 h. mortality 50%		McLeese et al., 1979 cited in Devilliers et al., 1990
	effect	mortality-mollusc	200	ug injection	slugs 20% mortality in 4 days; 20 ug injection no mortality 4 days		Briggs and Henderson, 1987 cited in Devilliers et al., 1990
	effect	mortality-bluegreen algae	0.5	mg/l	100% cell death of <i>Microcystis aeruginosa</i>		Fitzgerald et al. 1952 cited in Devilliers et al. 1990
	effect	mutagenicity	-		Ames test		Devilliers et al., 1990
	effect	protozoa	2-95	mg/l	Inhibitory effects on protozoa (cell multiplication, nutrient uptake, growth)		Bringmann, 1978; Bringmann et al., 1980; Schultz et al., 1987 - cited in Devilliers et al., 1990 and Devilliers et al., 1990.
	effect- chronic	growth rate decrease	0.5 to 1.0	% of diet	rats (male and female) 2 y dietary study; decrease in growth rate during first month of exposure; no significant different after 2 years from controls		Brewer 1953 cited in Devilliers et al., 1990
hydroxy-citronellal	effect	teratogenicity- chicks	OTD 0.02	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Roizman, 1983
ibuprofen	acute effects - aquatic	EC50	9.06-11.5	mg/l	crustacean - daphnia - 48 h		Knoll, BASF, 1995; Cited In Helling-Sorensen et al, 1998
	acute effects - aquatic	EC50	7.1	mg/l	S. costatum - 96 h test		Knoll, BASF, 1995 - ; Cited In Helling-Sorensen et al. 1998

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ibuprofen	acute effects - aquatic	LC50	173	mg/l	fish - sunfish - 96 h		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	MIC	5	mg/l	T. rubrum - 48 h test		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NEL	>30	mg/l	algae - S. capricornutum - 96 h		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NEL	>300	mg/l	fish - sheepshead minnow - 96 h		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NEL	>100	mg/l	fish - bluegill sunfish - 96 h		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NOEC	3	mg/l	crustacean - daphnia - 48 h		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NOEC	10	mg/l	fish - sunfish		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	NOEC	30	mg/l	mysid - Mysidopsis bahia		Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	EC50	12.3	mg/l	bacteria	Microtox (5min)	Knoll, BASF, 1995; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	20-40	ug/ml	bacteria; Epidermophytes floccosum		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	10-40	ug/ml	bacteria; Micorsporum fulva		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	120-140	ug/ml	bacteria; Mucor sp.		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	40-80	ug/ml	bacteria; S. aureus		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	50	ug/ml	bacteria; S. aureus; pH 6		Elvers and Wright, 1995; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	150	ug/ml	bacteria; S. aureus; pH 7		Elvers and Wright, 1995; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	5-20	ug/ml	bacteria; Trichophyton mentagrophytes		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	5-10	ug/ml	bacteria; Trichophyton rubrum		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	20-40	ug/ml	bacteria; Trichophyton tonsurans		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
	antimicrobial effects	MIC	140-160	ug/ml	yeast; Candida albicans		Sanyal et al, 1993; Cited in Halling-Sorensen et al, 1998
iohexol	acute effects - aquatic		low toxicity				Steger-Hartmann, Lange et al; Cited in Daughton and Temes, 1999
iopromide	acute effects - aquatic		low toxicity				Steger-Hartmann, Lange et al; Cited in Daughton and Temes, 1999
	acute effects - aquatic	EC10	>10	g/l	bacteria - Pseudomonas putida - 16 h	growth inhibition	Steger-Hartmann et al, 1999

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iopromide	acute effects - aquatic	EC50	>10	g/l	bacteria - <i>Vibrio fischeri</i> - 30 min	luminescence measurement	Steger-Hartmann et al, 1999
	acute effects - aquatic	EC50	>10	g/l	Daphnia - 48 h test	mortality	Steger-Hartmann et al, 1999
	acute effects - aquatic	EC50	>10	g/l	<i>Scenedesmus subspicatus</i> - 72 h test	biomass, growth rate	Steger-Hartmann et al, 1999
	acute effects - aquatic	LC50	>10	g/l	fish - <i>Danio rerio</i> - 96 h	mortality	Steger-Hartmann et al, 1999
	acute effects - aquatic	LC50	>10	g/l	fish - <i>Leuciscus idus</i> - 48 h	mortality	Steger-Hartmann et al, 1999
	subchronic effects - aquatic	NOEC	>10	g/l	Daphnia	reproduction	Steger-Hartmann et al, 1999
	acute effects - aquatic		low toxicity				Steger-Hartmann, Lange et al; Cited in Cited in Daughton and Ternes, 1999
ivermectin	acute effects - aquatic	EC50	39	ng/l	Daphnia - soil added to water - 48 hr study		Bloom and Matheson, 1993
	acute effects - aquatic	LC50	25	ng/l	Daphnia - 48 hr study		Bloom and Matheson, 1993
	acute effects - aquatic	MATC	4	ng/l	Daphnia - calculated 21 d MATC		Bloom and Matheson, 1993
	acute effects - aquatic	NOEL	10	ng/l	Daphnia - 48 hr study		Bloom and Matheson, 1993
	acute effects - terrestrial	effect level	0.08	mg/kg dung	insect - dung beetle - slight delay larval devel		Lumaret et al, 1993; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	effect level	0.18	mg/kg dung	Insect - dung dwelling diptera - no larval devel		Lumaret et al, 1993; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	LD50	2000	mg/kg	bird - bobwhite quail - oral		Bloom and Matheson, 1993
	acute effects - terrestrial	LD50	85	mg/kg	bird - mallard duck - oral		Bloom and Matheson, 1993
	acute effects - terrestrial	lethal dose	200	ug/kg bw	bush flies - cattle dosed by inj		Ridsdill-Smith, 1988; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	no effects	not stated		dung beetle not affected in dung of treated cattle		Ridsdill-Smith, 1988; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial effect		not determined; toxic at all conc. tested		96 h NOEC bluegill		Halley et al, 1989
	effect	acute toxicity - LC50 Daphnia	0.025	ppb	48 h LC50 Daphnia magna		Halley et al, 1989
	effect	acute toxicity - NOEC Daphnia	0.01	ppb	48 h NOEC Daphnia magna		Halley et al, 1989
	effect	soil nitrification	none up to 30	ppb tested	soil mixed with animal feces containing 30 ppb drug and metabolites		Halley et al, 1989
	effect	toxicity - 28-d LC50 earthworms	18-100	mg/kg	28 d LC50 earthworms artificial soil		Halley et al, 1989
	effect	toxicity - 28-d NOEC earthworms	12	mg/kg	28 d NOEC earthworms artificial soil		Halley et al, 1989

<i>chemical</i>	<i>data type</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
ivermectin	effect	toxicity - LC50 bluegill	4.8	ppb	96 h LC50 bluegill		Halley et al. 1989
	effect	toxicity - LC50 rainbow trout	3	ppb	96 h LC50 rainbow trout		Halley et al. 1989
	effect	toxicity - microorganisms none up to 2000		ppm			Halley et al. 1989
	effect	toxicity - NOEC rainbow trout	0.9	ppb	96 h NOEC rainbow trout		Halley et al. 1989
	effects - aquatic	LC50	5.3	ug/l	fish - sunfish - 96 h study		Bloom and Matheson, 1993
	effects - aquatic	LC50	3.3	ug/l	fish - trout - 96 h study		Bloom and Matheson, 1993
	effects on plants	highest dose tested - no effects	10	kg/ha	follar application		Bloom and Matheson, 1993
	effects on soil microbes	nitrification	no effect		pasture and forest soil		Bloom and Matheson, 1993
	effects on soil microbes	soil respiration	no effect		pasture and forest soil		Bloom and Matheson, 1993
	reproductive effect	effect level	0.5	ug/kg ww dung	dung fly - wing aberrations		Strong and James; Cited in Montforts et al, 1989
	reproductive toxicity	highest dose tested - no effects	12	ppm in feed	bird - mallard duck - 18 month feeding study		Bloom and Matheson, 1993
	subchronic effects - terrestrial	LC50	3102	mg/kg feed	bird - bobwhite quail - oral - 8 d feeding study		Bloom and Matheson, 1993
	subchronic effects - terrestrial	LC50	383	mg/kg feed	bird - mallard duck - oral - 8 d feeding study		Bloom and Matheson, 1993
	subchronic effects - terrestrial	LC50	315	mg/kg	worm - 28 d study; 5 doses up to 200 mg/kg		Bloom and Matheson, 1993
	subchronic effects - terrestrial	sensitivity of larvae	13-14	d	coleoptera - Aphodius spp - days post-treatment until adult emergence equalled that of control		Sommer et al, 1992b; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	14	d	coleoptera - Aphodius spp - days post-treatment until adult emergence equalled that of control		Strong and Wall, 1994; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	10	d	coleoptera - Aphodius spp - days post-treatment until adult emergence equalled that of control		Madsen et al, 1990; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	16	d	coleoptera - Copris hispanis - days post-treatment until adult emergence equalled that of control		Wardhaug et al, 1988; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	10	d	coleoptera - Euoniticellus fulvus - days post-treatment until adult emergence equalled that of control		Lumaret et al, 1988; Cited in Halling-Sorensen et al, 1998

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ivermectin	subchronic effects - terrestrial	sensitivity of larvae	21	d	coleoptera - <i>Ontophagus gazelle</i> - days post-treatment until adult emergence equalled that of control		Fincher, 1992; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	17	d	coleoptera - <i>Ontophagus gazelle</i> - days post-treatment until adult emergence equalled that of control		Sommer and Neilsen, 1992c; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	>30	d	diptera - <i>Cyclorrhapha</i> - days post-treatment until adult emergence equalled that of control		Madsen et al, 1990; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	42	d	diptera - <i>Cyclorrhapha</i> - days post-treatment until adult emergence equalled that of control		Sommer et al, 1992b; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	42	d	diptera - <i>Haematobia irritans</i> - days post-treatment until adult emergence equalled that of control		Schmidt, 1983; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	63	d	diptera - <i>Haematobia irritans</i> - days post-treatment until adult emergence equalled that of control		Fincher, 1992; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	56	d	diptera - <i>Haematobia irritans</i> - days post-treatment until adult emergence equalled that of control		Miller et al, 1981; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	14	d	diptera - <i>Musca autumnalis</i> - days post-treatment until adult emergence equalled that of control		Mayer et al, 1980; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	0	d	diptera - <i>Nematocera</i> - days post-treatment until adult emergence equalled that of control		Sommer et al, 1992b; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	20	d	diptera - <i>Nematocera</i> - days post-treatment until adult emergence equalled that of control		Madsen et al, 1990; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	32	d	diptera - <i>Neomyia cornicina</i> - days post-treatment until adult emergence equalled that of control		Wardhaugh et al, 1988; Cited in Halling-Sorensen et al, 1998

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ivermectin	subchronic effects - terrestrial	sensitivity of larvae	17	d	diptera- <i>Neomyia cornicina</i> - days post-treatment until adult emergence equalled that of control		Lumaret et al, 1993; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	14	d	diptera- <i>Stomoxys calcitrans</i> - days post-treatment until adult emergence equalled that of control		Schmidt, 1983; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	inhib of development		fly - bush fly - larval devel inhibited 7- 14 d after animal treatment		Wardhaug et al, 1998; Cited in Halling-Sorensen et al, 1998
	subchronic effects - terrestrial	sensitivity of larvae	inhib of development		fly - house fly - larval devel inhibited 7- 14 d after animal treatment		Wardhaug et al, 1998; Cited in Halling-Sorensen et al, 1998
ivermectin aglycone	effect	acute toxicity - LC50 Daphnia	>17	ppb	48 h LC50 Daphnia magna		Halley et al. 1989
	effect	acute toxicity - NOEC Daphnia	>9	ppb	48 h NOEC Daphnia magna		Halley et al. 1989
ivermectin monosaccharide	effect	acute toxicity - LC50 Daphnia	0.4	ppb	48 h LC50 Daphnia magna		Halley et al. 1989
	effect	acute toxicity - NOEC Daphnia	0.1	ppb	48 h NOEC Daphnia magna		Halley et al. 1989
kanamycin	antibiotic resistance		resistance developed		environ samples		Leff et al, 1993; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Sandaa et al, 1992; Cited in Halling-Sorensen et al, 1998
LAB	effect	algae- 96:h	no effect at nominal 1000	mg/l			Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	bacteria	8.8; 10	mg/l	<i>Pseudomonas putida</i>	bacteria-EC10 ; concentrations after 6 and 18 h	Binetti et al. 2000
	effect	benthic invertebrate- 14 d	no effect up to 0.125	mg/l	<i>Chironomus tentans</i> larvae	14C-labelled LAB, solvent and river sediments	Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	fish - 48:h	no effect at nominal 1000	mg/l	<i>Leuciscus idus melanotus</i>	DIN 38412, GLP	Huls, 1994 cited in Binetti et al. 2000.
	effect	fish-96:h	no effect at 1000	mg/l	<i>Salmo gairdneri</i> , <i>Pimephales promelas</i> , <i>Lepomis macrochirus</i>		Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	Invertebrate	no effect up to 1000	mg/l	<i>Paratanytarsus</i>	48:h	Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	Invertebrate -48h	no effect at 3.8 and 1000 mg/l	Daphnia		+/- emulsifier; DIN	Huls, 1983 cited in Binetti et al. 2000
	effect	Invertebrate -48h	no adverse effects @ saturation concentration	Daphnia		48:h; OECD Guideline 202, Part 1	Petresa, 1994b cited in Binetti et al. 2000
	effect	Invertebrate -48h	no adverse effects @ saturation concentration	Daphnia		48:h; no carrier solvent used; conducted according to EU-C-2 method (Annex V dir 87/548/EEC)	Gledhill et al. 1991 cited in Binetti et al. 2000

chemical	data type	descriptor	value	units	test matrix	method/parameters	reference
LAB	effect	invertebrate - 96 h	no effect up to 1000	mg/l	Chironomus tentans	96 h	Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	invertebrate - 96 h	no effect up to 1000	mg/l	Gammarus fasciatus	96h	Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	invertebrate - 96 h	no effect up to 1000	mg/l	Misydopsis bhai	96 h	Gledhill et al. 1991 cited in Binetti et al. 2000
	effect	LC50-invertebrate - 48h	0.009 to 0.08	mg/l	Daphnia	48 h LC50; tests used carrier solvent of acetone (1 mg/l) or dimethylformamide (0.25 mg/l).	Gledhill et al. 1991 cited in Binetti et al. 2000
	effect - no effect level	invertebrate - 21 d chronic	0.0075	mg/l	Daphnia magna	with acetone carrier solvent	Gledhill et al. 1991 cited in Binetti et al. 2000
MEA	effect	acute toxicity - LC50 24 h fish	190	mg/l	Carassius auratus	static, measured conc., pH 10.1	Bridle et al., 1979b cited in Davis and Carpenter, 1997
	effect	acute toxicity - LC50 24 h invertebrate	140	mg/l	Daphnia magna	static, unmeasured conc.	Bringmann and Kuhn, 1977 cited in Davis and Carpenter, 1997
	effect	acute toxicity - LC50 96 h fish	2100	mg/l	fathead minnow	flowthrough, measured conc.	Newsome et al., 1991
	effect	acute toxicity - LC50 96 h fish	150	mg/l	rainbow trout	static, unmeasured conc.	Johnson and Finley, 1980 cited in Davis and carpenter, 1997
	effect	growth inhibition - algae	> 0.75	mg/l	3% decrease in extinction coefficient		Bringmann and Kuhn, 1980 cited in Davis and Carpenter, 1997
methotrexate	acute effects - aquatic	EC50	280	mg/l	algae	OECD 201	Henschel et al, 1997
	acute effects - aquatic	EC50	1220	mg/l	bacteria - luminescence	DIN guideline 38412 L34	Henschel et al, 1997
	acute effects - aquatic	EC50	45	mg/l	ciliates - Tetrahymena pyriformis	Pauli, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	>1000	mg/l	daphnia - immobilization	OECD 202	Henschel et al, 1997
	acute effects - aquatic	EC50	85	mg/l	fish - zebra fish - mortality	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	142	mg/l	fish - zebra fish - pulse rate	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	3	mg/l	fish-cells in vitro	bluegill+sunfish cells in culture - cytotox and inhib of prolif	Henschel et al, 1997
	acute effects - aquatic	EC10	2.03	mg/l	algae - Chlorella sp. - 72 h		Lanzky and Halling-Sorensen (in press); Cited in Halling-Sorensen et al, 1998
metronidazole	acute effects - aquatic	EC10	19	mg/l	algae - S. capricornutum - 72 h		Lanzky and Halling-Sorensen (in press); Cited in Halling-Sorensen et al, 1998
	effect	genotoxicity	marginal			SOS chromotest	Kummerer et al. 2000
	effect	NOEC- acute invertebrate	1000	mg/l	48h NOEC Daphnia magna		Wollenberger et al. 2000
	effect	toxicity - chronic invertebrate	250	mg/l	NOEC.reproduction Daphnia magna		Wollenberger et al. 2000
	effect	acute toxicity - LC50 24 h fish	>5000	mg/l	Carassius auratus	static, measured conc. pH 7.0	Bridle et al. 1979b cited in Davis and Carpenter, 1997

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MIPA	effect	acute toxicity - LC50 96 h fish	2500	mg/l	fathead minnow	flowthrough , measured conc:	Newsome et al., 1991
mitomycin	genotoxicity	mutation	positive		bacteria	Umu C test on hospital waste water	Gulliana et al, 1998; Cited in Halling-Sorensen et al, 2000
moxestrol	estrogenic effects	vitellogenin production	16	nmol/100g	injection - Japanese quail	immunoelectrophoresis	Robinson and Verlinder Gibbins, 1984
	estrogenic effects	vitellogenin production	16	nmol/100g	injection - Japanese quail	immunoelectrophoresis	Robinson and Verlinder Gibbins, 1984
moxidectin	subchronic effects - terrestrial	sensitivity of larvae	delayed devel		fly - bush fly		Wardhaug et al, 1996; Cited in Halling-Sorensen et al, 2000
	subchronic effects - terrestrial	sensitivity of larvae	delayed devel		fly - house fly		Wardhaug et al, 1996; Cited in Halling-Sorensen et al, 2000
musk - AHMI (phantolid)	effect	genotoxicity	-ve		human lymphocyte sister chromatid exchange test		Kevekordes et al. 1998
	mutagenicity	mutagenicity	-ve		Ames TA97,TA98,TA100,TA102 (+S-9) and (-S-9)		Mersch-Sundermann et al., 1998
musk -ADBI (Celestolide)	neurotoxic effects	13 week-NOEL rats	100	mg/kg/d	dermal exposure 7 d/wk		Gressel et al. 1980
	effect	genotoxicity	-ve		human lymphocyte sister chromatid exchange test		Kevekordes et al. 1998
	mutagenicity	mutagenicity	-ve		Ames TA97,TA98,TA100,TA102 (+S-9) and (-S-9)		Mersch-Sundermann et al., 1998
musk -AETT	neurotoxic effects	13 week-NOEL rats	100	mg/kg/d	dermal exposure 7 d/wk		Gressel et al. 1980
	neurotoxic effects	28 week-NOEL rats	3	mg/kg/d	dermal exposure 7 d/wk		Gressel et al. 1980
	toxicity	uncouple oxidative phosphorylation	y		liver and brain mitochondria		Cammer. 1980
musk nitro - xylene	acute effects - aquatic	EC50	>5.6	mg/l	daphnia - 48 hr static test	EEC dir 79/831, Annex V part C.2	unpublished report - Cited in Tas, Balk et al, 1997
	acute effects - aquatic	LC50	1.2	mg/l	sunfish - 96 hr static test	US-EPA-660/3-75-009	unpublished report - Cited in Tas, Balk et al, 1997
	acute effects - aquatic	LC50	>1000	mg/l	trout alevins - clinical signs, mortality or abnormal behaviour	APHA 1980	Boleas et al, 1996 - Cited in Tas, Balk et al, 1997
	acute effects - aquatic	NOEC	>0.15	mg/l	bacteria - <i>Vibrio fischeri</i>		Schramm et al, 1996; Cited in Tai, Balk et al, 1997
	acute effects - aquatic	NOEC	>0.15	mg/l	Daphnia		Schramm et al, 1996; Cited in Tai, Balk et al, 1997
	acute effects - aquatic	NOEC	0.32	mg/l	daphnia - swimming behaviour - 48 hr static test	EEC dir 79/831, Annex V part C.2	unpublished report - Cited in Tas, Balk et al, 1997
	acute effects - aquatic	NOEC	>0.15	mg/l	<i>Scenedesmus subspicatus</i>		Schramm et al, 1996; Cited in Tai, Balk et al, 1997
	effect	acute lethality	>1000	mg/l	rainbow trout alevins (5-10g)	96 h exposure up to 1000 mg/l	Boleas et al. 1996

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musk nitro - xylene	effect	carcinogenicity - mice	-heptaocarcinogen		mice	chronic exposure	Maekawa et al. 1990 cited in Boles et al. 1996
	effect	enzyme induction P450 - rat			rat		Iwata et al. 1992, 1993a and 1993b cited in Boles et al. 1996
	effect	EROD activity	no significant effect		control vs exposed fish-rainbow trout	activity measured on hepatic S9 fractions rather than liver microsomes; B-Naphtoflavone 50 mg/kg was positive control	Boles et al. 1996
	effect	mutagenicity	-ve				Nair et al. 1986 cited in Boles et al. 1996
	effect	retinol levels	no significant effect		control vs exposed fish-rainbow trout	plasma retinol levels after microextraction HPLC analysis	Boles et al. 1996
	subchronic effects - aquatic	LC50	0.68	mg/l	daphnia - 21 d semi-static study	EEC Ring test method 1985	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	LC50	0.4	mg/l	zebrafish - 14 d test - 3x weekly renewal	OECD TG 204	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	NOEC	>5.6	mg/l	algae - 5 d static test	method of Payne and Hall; ref #25	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	NOEC	>10	mg/l	algae - cell counts - 5 d static test	method of Payne and Hall; ref #25	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	NOEC	>10	mg/l	algae - no. of cells and fluorescence - 5 d static test	method of Payne and Hall; ref #25	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	NOEC	0.0056	mg/l	daphnia - reproduction - 21 d semi-static study	EEC Ring test method 1985	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	NOEC	<0.1	mg/l	zebrafish - growth - 14 d test - 3x weekly renewal	OECD TG 204	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - aquatic	PNEC	1.1	ug/l	water	factor of 50 applied to lowest of 2 NOEC	Tas, Balk et al, 1997
	subchronic effects - lab animal	NOEL	24	mg/kg bw	rat - albino - 90 d dermal study	4 doses - 7.5-240 mg/kg; 15 M; 15F per grp; collars to prevent ingestion; clinical chem, hematol, gross and histopathology, neuropathology, growth evaluated	Ford et al, 1990; Cited in Tas, Balk et al, 1997
neomycin	subchronic effects - terrestrial	NOEC	>50	mg/kg	earthworms in artificial soil survival, growth, behaviour - 14 d study	OECD 207	unpublished report - Cited in Tas, Balk et al, 1997
	subchronic effects - terrestrial	PNEC	0.23	mg/kg dw	soil/sediment	calculated from PNEC (water) based on partitioning data since no effects at highest dose tested	Tas, Balk et al, 1997
	subchronic effects - predator	PNEC	8	mg/kg bw	predator	factor of 30 applied to rat NOEL	Tas, Balk et al, 1997
	antibiotic resistance		resistance developed		environ samples		Leff et al, 1993; Cited in Halling-Sorensen et al, 1998
neroli	effect	teratogenicity- chicks	OTD 0.2	M	chick embryos 3rd day devel	inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Rolzman, 1983

chemical	data type	descriptor	value	units	test matrix	method/parameters	reference
nerol	effect	teratogenicity- chicks	OTD 0.2	M	chick embryos 3rd day devel	Inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Rolzman, 1983
nitrofurantoin	genotoxicity	mutagenicity	mutagen?				Richardson and Bowron, 1985
nitrofurazone	acute effects - aquatic	EC50	1.45	mg/l	algae		Macri and Sbardella, 1984; Cited in Halling-Sorensen et al, 1998
	acute effects - aquatic	LC50	28.67	mg/l	crustacean- daphnia		Macri and Sbardella, 1984; Cited in Halling-Sorensen et al, 1998
nonylphenol	genotoxicity	mutagenicity	mutagen?				Richardson and Bowron, 1985
	effects	fecundity- invertebrate	reduced		nematode	observation of #larvae after 7 day exposure to 25 uM (dieldrin + nonylphenol) or (toxaphene + nonylphenol)	Hood et al. 2000
nonylphenol/alkylphenols	effect	growth	altered		fish		Ashfield et al. 1998 cited in Sumpter 1998
	effect	NOEC- induction of vitellogenesis in caged trout	5 to 20	ug/l	caged trout		Blackburn et al. 1999
	estrogenic effects				leachate from plastics		Crisp et al. 1998
	estrogenic effects	potency vs estradiol	10-3 to 10-4	times less potent			Crisp et al. 1998
norepinephrine	effect	crustacean-ovarian development	no significant effect		female red swamp crayfish	15 ug/g body weight injection	Kulkarni et al. 1992
novobixin	acute effects - aquatic	LC50	0.08	mg/l	sediment bacteria - <i>Vibrio harveyi</i>		Thomulka et al, 1993; Cited in Halling-Sorensen et al, 1998
	antibiotic-resistance		resistance observed		sediment bacteria		Sandaas et al, 1992; Cited in Halling-Sorensen et al, 1998
octanal	effect	teratogenicity- chicks	OTD 0.5	M	chick embryos 3rd day devel	Inject suprablastodermically single dose dissolved in olive oil	Abramovici and Rachmuth-Rolzman, 1983
octylphenol	effect	rats-pubertal spermatogenesis	2	mg/d	treated from day 2-12		Atanassova et al., 2000
ofloxacin	effect	genotoxicity	1-2	ug/l	genotoxicity	SOS chromotest	Kummerer et al. 2000
olaquindox	effect	growth inhibition - algae	5.1	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen
	effect	growth inhibition - algae	40	mg/l	EC50 green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen
	effect	toxicity - acute invertebrate	1000	mg/l	48h NOEC Daphnia magna	ISO(1998); OECD (1996)	Wollenberger et al. 2000
olestra	acute effects - aquatic	effect	100 and 1000	mg/L	5-d algal growth test	observed	Allgood et al. 1997
	acute effects - aquatic	effect	no mortality upto 1000	mg/L	96-h exposure of bluegill	observed	Allgood et al. 1997
	acute effects - aquatic	effect	~1000	mg/L	Daphnia magna neonate static 48-h LC50	observed	Allgood et al. 1997

chemical	data type	descriptor	value	units	test matrix	method/parameters	reference
olestra	effect on sludge dewatering	effect	no adverse		liquid and solid olestra added up to 10,000 mg/L	gas production	Allgood et al. 1997
	effects on septic tank performance	effect	no adverse		35.8 g/d olestra for 6 mos to septic systems		Greff et al. 1995 cited in Allgood et al. 1997
	effects on soil physical properties	effect	none: up to 14,250 except aggregate stability increased	mg/kg	measured porosity, moisture retention, pore size distribution, aggregate stability, compressibility, shrink-swell and plasticity, and saturated hydraulic conductivity		Allgood et al. 1997
	effects on wastewater treatment	effect	no adverse		primary treatment or secondary treatment		Allgood et al. 1997
	effects on wastewater treatment	effect	no adverse		sludge amended soils		Allgood et al. 1997
	mammalian toxicity	effect	no growth effects @ 5% of diet		6 month dietary exposure in pigs		Allgood et al. 1997
	mammalian toxicity	effect	not toxic: up to 10% of diet		dietary exposure in rodents (life-time) and dogs (20 month)	observed	Allgood et al. 1997
	mammalian toxicity	genotoxicity	none				Skare et al. 1990 cited in Allgood et al. 1997
	mammalian toxicity	teratogenicity	none				Nolen et al 1987 cited in Allgood et al. 1997
	phytotoxicity	effect	no effect up to 930	mg/kg	no effect on seedlings of corn, cucumbers, rye grass, soybean, and wheat.		Allgood et al. 1997
	phytotoxicity	effect	reduction in root weight @ 430	mg/kg	pinto beans		Allgood et al. 1997
	phytotoxicity	effect	no effect up to 1000	mg/kg	seed germination, plant growth or seed production of corn, fescue, wheat and soybean		Allgood et al. 1997
	septic tank	concentration	15.5	mg/l	max conc on-site	estimated	Allgood et al. 1997
	soil microbial activity	effect	no effect @ 750	mg/kg	sucrose mineralization/utilization	measured $^{14}\text{CO}_2$ evolution	Allgood et al. 1997
	soil mobility	mobility	<1.2	%	in Borden sand over 69 d		Allgood et al. 1997
	terrestrial invertebrate toxicity	effect	no adverse effect up to 5000	mg/kg	earthworm exposed for 28 d up to 5000 mg/kg		Allgood et al. 1997
oxolinic acid	acute effect-aquatic	toxicity - acute invertebrate	4.6	mg/l	48h EC50 Daphnia magna	ISO (1989); OECD (1996)	Wollenberger et al. 2000
	antibiotic-resistance		resistance: observed		sediment bacteria		Sandaas et al., 1992; Cited in Halling-Sorensen et al., 1998
	antibiotic-resistance	sediment bacteria	resistance				Nygaard et al., 1992 Cited in Halling-Sorensen et al., 1998
	effect	toxicity - chronic invertebrate	0.38	mg/l	NOEC reproduction Daphnia magna		Wollenberger et al. 2000

<i>chemical</i>	<i>data type</i>	<i>descriptor</i>	<i>value</i>	<i>units</i>	<i>test matrix</i>	<i>method/parameters</i>	<i>reference</i>
oxytetracycline	acute effects - terrestrial	effect level	<160	ppm	plant - corn - growth stimulation		Batchelder, 1982; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	effect level	<160	ppm	plant - pinto bean - growth inhib + N uptake		Batchelder, 1982; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	effect level	<160	ppm	plant - radish - growth stimulation + N uptake		Batchelder, 1982; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	effect level	<160	ppm	plant - wheat - growth stimulation		Batchelder, 1982; Cited in Halling-Sorensen et al, 1998
	acute effects - terrestrial	lethal level	160	ppm	plant - pinto bean; all plants died		Batchelder, 1982; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Kerry, 1995a; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Husevag et al, 1991; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Kerry et al, 1995b; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Nygaard et al, 1992; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Samuelson, 1992a; Cited in Halling-Sorensen et al, 1998
	antibiotic resistance		resistance observed		sediment bacteria		Sandaa et al, 1992; Cited in Halling-Sorensen et al, 1998
	chronic effect - aquatic	toxicity - chronic invertebrate	46.2	mg/l	EC50 reproduction Daphnia magna	ISO (1989); OECD(1998)	Wollenberger et al. 2000
p-aminobenzoic acid	effect	toxicity - acute invertebrate	~1000	mg/l	48h EC50 Daphnia magna	ISO(1989); OECD (1998)	Wollenberger et al. 2000
	genotoxicity	photosensitization DNA cleavage	~				Shaw et al. 1992 cited in Stevenson and Davies, 1999
	reproductive effects	effect level	~31.8	ug/l	molluscs - male - spawning behaviour induced		Fong et al, 1998; Cited in Daughton and Temes, 1999
	reproductive effects	effect level	up to 10-5	M	zebramussels - female - no induction of spawning		
	reproductive effects	effect level	10-5 to 10-6	M	zebramussels - male - significant induction (50 % and 40%, respectively) of spawning		Fong, 1998a
paroxetine	reproductive effects	induced parturition	10	uM	fingernail clam	10 ml test soin, one clam per vial, 9.0 ml spring water and 0.1% ETOH + paroxetine, observe for 4 h for release of juvenile clams; release of at least one extra-marsupial larva equals positive response.	Fong et al, 1998b
	reproductive effects	no effect	no effect		molluscs - female - spawning behaviour - no effect		Fong et al, 1998; Cited in Daughton and Temes, 1999

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PBSA	genotoxicity	photosensitization DNA cleavage	y		PBSA and end-labelled synthetic oligodeoxyribonucleotides	exposed to UV-B 290-320 nm and natural sunlight	Stevenson and Davies, 1999
PBZ	genotoxicity	photosensitization DNA cleavage	y		PBZ and end-labelled synthetic oligodeoxyribonucleotides		Stevenson and Davies, 1999
phenobarbitone phenol	effects - MFO induction effect	MFO induction lowest NOAEL	potent inducer 1000	ppm	based on rat pup survival and body weight in a two generation study		Richardson and Bowron, 1985 TPP review of Phenol in OTCs, letter from Dan Michols, Director General, TPP, Health Canada to David Skinner, President NDMAC dated Aug. 6, 1999
pivmecillinam	acute effects - aquatic	EC50	62.1	mg/l	bacteria from activated sludge (mecillinam data)	ISO 15522	Halling-Sorenson et al, 2000
	acute effects - aquatic	EC50	0.06	mg/l	cyanobacteria - <i>M. aeruginosa</i> (mecillinam data)	ISO 15522?	Halling-Sorenson et al, 2000
	acute effects - aquatic	NOEC	300	mg/l	algae - <i>S. capricornatum</i> (mecillinam data)	OECD 201	Halling-Sorenson et al, 2000
	acute effects - aquatic	NOEC	300	mg/l	daphnia (mecillinam data)	OECD 202	Halling-Sorenson et al, 2000
	acute effects - aquatic	NOEC	100	mg/l	fish - zebra fish (mecillinam data)	OECD 203	Halling-Sorenson et al, 2000
	acute effects - aquatic	PNEC	0.0006	mg/l	calculated based on lowest EC50 (mecillinam data)		Halling-Sorenson et al, 2000
propanolol	acute effects - aquatic	LC50	3.1	mg/l	crustacean - daphnia		Calleja et al, 1993; Cited in Halling-Sorenson et al, 2000
	acute effects - aquatic	LC50	17.7	mg/l	crustacean - daphnia		Lilius et al, 1995; Cited in Halling-Sorenson et al, 2000
putative genotoxic agents - direct acting	environmental loadings	genotoxicity	90	%	municipal wastewater effluent, Montreal Urban Community WWT facility	SOS Chromotest	White and Ramussen, 1998
	environmental loadings	genotoxicity	>85	%	surface water genotoxicity for St. Lawrence R. at Montreal	SOS Chromotest	White and Ramussen, 1998
receiving waters of sewage effluents	estrogenic effects	vitellogenin production	y		male trout caged	cages placed downstream of sewage treatment works for 3 weeks	Sumpter, 1995
salicylic acid	acute effects - aquatic	EC50	>100	mg/l	algae	OECD 201	Henschel et al, 1997
	acute effects - aquatic	EC50	>100	mg/l	algae	OECD 201	Henschel et al, 1997
	acute effects - aquatic	EC50	90	mg/l	bacteria - luminescence	DIN guideline 38412 L34	Henschel et al, 1997
	acute effects - aquatic	EC50	90	mg/l	bacteria - luminescence	DIN guideline 38412 L34	Henschel et al, 1997
	acute effects - aquatic	EC50	>100	mg/l	ciliates - <i>Tetrahymena pyriformis</i>	Pauli, 1994	Henschel et al, 1997

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salicylic acid	acute effects - aquatic	EC50	>100	mg/l	ciliates - Tetrahymena pyriformis	Pauli, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	118	mg/l	daphnia - immobilization	OECD 202	Henschel et al, 1997
	acute effects - aquatic	EC50	118	mg/l	daphnia - immobilization	OECD 202	Henschel et al, 1997
	acute effects - aquatic	EC50	37	mg/l	fish - zebra fish - mortality	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	37	mg/l	fish - zebra fish - mortality	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	50	mg/l	fish - zebra fish - pulse rate	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	50	mg/l	fish - zebra fish - pulse rate	Schulte and Nagel, 1994	Henschel et al, 1997
	acute effects - aquatic	EC50	>500	mg/l	fish cells in-vitro	bluegill sunfish cells in culture - cytotox and inhib of prolif	Henschel et al, 1997
	acute effects - aquatic	EC50	>500	mg/l	fish cells in-vitro	bluegill sunfish cells in culture - cytotox and inhib of prolif	Henschel et al, 1997
						5HT via injection conc. in hemolymph of crayfish and lobster	
serotonin	effect	crustacean - behaviour	10-5	M	crayfish, lobster	Huber et al. 1997	
	effect	crustacean-neurohormones	stimulate GSH in female		red swamp crayfish		Kulkarni et al. 1992
	effect	crustacean-neurohormones	stimulate neurodepressing hormone		crustacean		Arechiga et al. 1985 cited in Sarojini et al. 1993
	effect	crustacean-neurohormones	stimulate molt-inhibiting hormone		crustacean		Mattsson and Spaziani, 1985 cited in Sarojini et al. 1993
	effect	crustacean-neurohormones	stimulate red pigment hormone		crustacean		Rao and Fingerman, 1970 cited in Sarojini et al. 1993
	effect	crustacean-neurohormones	stimulate hyperglycemic hormone		crustacean		Keller and Beyer, 1968 cited in Sarojini et al. 1993
	effect	crustacean-neurohormones	stimulate GSH in female		fiddler crab		Richardson et al., 1991 cited in Sarojini et al. 1993
	effect-reproduction	crustacean - testes development	stimulate by release of gonad-stimulating hormone		fiddler crabs - male		Sarojini et al. 1993
	effect-reproduction	crustacean-ovarian development	stimulated ovarian development		red swamp crayfish - female	15 ug/g body weight injection	Kulkarni et al. 1992
sewage treatment effluents	estrogenic effects	vitellogenin production	Y		male trout caged	cages placed in sewage effluent	Purdom et al. 1994, Copeland et al. 1988, and Jobling et al. 1995 cited in Sumpter 1995
spiramycin	effect	growth inhibition - algae	0.005	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorenson, 2000
	effect	growth inhibition - algae	2.3	mg/l	EC50 green algal growth of <i>Seleniastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorenson, 2000
streptomycin	acute effects - aquatic	effect level	0.09-0.86	mg/l	algae - blue green - growth prevention		Harrass et al. 1985; Cited in Halling-Sorenson et al. 1998
	acute effects - aquatic	effect level	0.66	mg/l	<i>Chlamydomonas reinhardtii</i> - growth prevention		Harrass et al. 1985; Cited in Halling-Sorenson et al. 1998

chemical	data type	descriptor	value	units	test matrix	method/parameters	reference
streptomycin	acute effects - aquatic	effect level	21	mg/l	Scenedesmus obliquus - growth prevention		Harrass et al, 1985; Cited in Halling-Sorensen et.al, 1998
	acute effects - aquatic	LC50	19	mg/l	sediment bacteria - Vibrio harveyi	bioluminescence test	Thomulka et al, 1993; Cited in Halling-Sorensen et al, 1998
	effect	growth inhibition - algae	0.007	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
	effect	growth inhibition - algae	0.133	mg/l	EC50 green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen
	effect	toxicity - acute invertebrate	487	mg/l	48h EC50 Daphnia magna	ISO(1989); OECD(1996)	Wollenberger et al. 2000
	effect	toxicity - chronic invertebrate	32	mg/l	NOEC reproduction Daphnia magna	ISO(1989); OECD(1996)	Wollenberger et al. 2000
sulfadiazine	effect	toxicity - acute invertebrate	221	mg/l	48h EC50 Daphnia magna	ISO(1989); OECD(1996)	Wollenberger et al. 2000
	effect	toxicity - chronic invertebrate	13.7	mg/l	EC50 reproduction Daphnia magna	ISO(1989); OECD(1996)	Wollenberger et al. 2000
sulfadimethoxine	acute effects - aquatic	LC50	19	mg/l	Artemia salina - 96 h		Brambilla et al , 1994; Cited in Halling-Sorensen et.al, 1998
	acute effects - aquatic	LC50	1.8	g/l	custacean - Artemia salina - 24 h		Brambilla et al , 1994; Cited in Halling-Sorensen et.al, 1998
	acute effects - aquatic	LC50	0.9	g/l	custacean - Artemia salina - 48 h		Brambilla et al , 1994; Cited in Halling-Sorensen et.al, 1998
	acute effects - aquatic	LC50	0.5	g/l	custacean - Artemia salina - 72 h		Brambilla et al , 1994; Cited in Halling-Sorensen et.al, 1998
	acute effects - terrestrial	effects	weight reduction		plant - unspecified		Brambilla et al , 1994; Cited in Halling-Sorensen et.al, 1998
TEA	effect	acute toxicity - LC50 24 h fish	>5000	mg/l	Carassius auratus	static, measured conc.	Bridie et al. 1979b cited in Davis and Carpenter, 1997
	effect	acute toxicity - LC50 24 h invertebrate	1390	mg/l	Daphnia magna	static, unmeasured conc.	Bringmann and Kuhn, 1977 cited in Davis and Carpenter, 1997
	effect	acute toxicity - LC50 96 h fish	1800	mg/l	fathead minnow	flowthrough , measured conc.	Newsome et al., 1991
	effect	chronic toxicity - aquatic invertebrate	16	mg/l	Daphnia magna NOEC	21 day parent animal mortality at nominal concentration	Kuhn et.al. 1989 cited in Davis and Carpenter, 1997
	effect	growth inhibition - algae	19; 470 to 750	mg/l	algal population growth 3% decrease 7d; EC50 48 h		Bringmann and Kuhn, 1978 and Kuhn and Pattard, 1990 cited in Davis and Carpenter, 1997
testosterone	estrogenic effects	vitellogenin production	-	160 umol/100g injection Japanese quail	immunoelectrophoresis		Robinson and Verrinder Gibbins, 1984
tetracycline	effect	growth inhibition - algae	0.09	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
	effect	growth inhibition - algae	2.2	mg/l	EC50 green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000

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tetracycline	effect	toxicity - acute invertebrate	340	mg/l	48h NOEC Daphnia magna		Wollenberger et al. 2000
	effect	toxicity - chronic invertebrate	44.8	mg/l	EC50 reproduction Daphnia magna		Wollenberger et al. 2000
tiamulin	effect	growth inhibition - algae	0.003	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
	effect	growth inhibition - algae	0.165	mg/l	EC50 green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen, 2000
trimethoprim	effect	toxicity - acute invertebrate	40	mg/l	48h EC50 Daphnia magna		Wollenberger et al. 2000
	effect	toxicity - chronic invertebrate	5.4	mg/l	EC50 reproduction Daphnia magna		Wollenberger et al. 2000
trimethoprim	acute effects - aquatic	EC50	110	mg/l	algae - <i>S. capricornutum</i>	OECD 201	Halling-Sorensen et al, 2000
	acute effects - aquatic	EC50	17.8	mg/l	bacteria from activated sludge	ISO 15522	Halling-Sorensen et al, 2000
	acute effects - aquatic	EC50	112	mg/l	cyanobacteria - <i>M. aeruginosa</i>	ISO 15522?	Halling-Sorensen et al, 2000
	acute effects - aquatic	EC50	123	mg/l	daphnia	OECD 202	Halling-Sorensen et al, 2000
	acute effects - aquatic	NOEC	100	mg/l	fish - zebra fish	OECD 203	Halling-Sorensen et al, 2000
	acute effects - aquatic	PNEC	0.18	mg/l	calculated based on lowest EC50 (mecillinam data)		Halling-Sorensen et al, 2000
tylosin	effect	growth inhibition - algae	0.034	mg/l	EC50 green algal growth of <i>Microcystis aeruginosa</i>	ISO 8692(1989) standard protocol	Halling-Sorensen
	effect	growth inhibition - algae	1.38	mg/l	EC50 green algal growth of <i>Selenastrum capricornutum</i>	ISO 8692(1989) standard protocol	Halling-Sorensen
verapamil	effect	toxicity - acute invertebrate	680	mg/l	48h EC50 Daphnia magna		Wollenberger et al. 2000
	effect	toxicity - chronic invertebrate	45	mg/l	NOEC reproduction Daphnia magna		Wollenberger et al. 2000
verapamil	acute effects - aquatic	EC50	0.11-0.67	mM			Epel, 1998; Cited in Daughton and Ternes, 1999
	effects - aquatic	effect level	uM conc		increases tox. of other drugs to aquatic organisms		Epel, 1998; Cited in Daughton and Ternes, 1999



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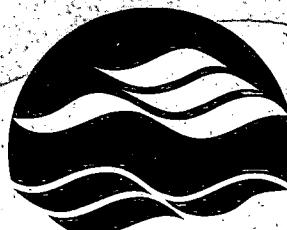
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