APPENDIX B. ENVIRONMENTAL CONCENTRATIONS

The tables in this appendix are discussed in Chapter 5. References listed at the end of each table are included in the reference list at the end of Chapter 4. Following are the tables included in this Appendix:

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
Tetrachlorodibenzo-p-dioxins (MW=321.98)									
2,3,7,8-TCDD	3	0	ND(0.01-0.02)	NA	Niagra Falls, NY	Urban	86-87	1	
	3	0	ND(0.01-0.02)	NA	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	ND(0.01)	NA	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.0095)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.05	0.01	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	2	ND-0.004	0.002	Wallingford, CT	Urban	88	5	
	NR	NR	ND(0.02)	NA	Rutland, VT	Urban	NR	6	
	NR	NR	ND(0.03)	NA	Durham, NC	Urban	NR	6	
	1	1	0.0004	0.0004	Stockholm, Sweden	Urban	89	7	
	2	2	0.02-0.06	0.04	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	0.02-0.08	0.05	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	0	ND(0.012-0.2)	NA	Akron, OH	Industrial	87	9	near incinerators
	2	0	ND(0.24-0.82)	NA	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.15)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	0	ND(0.058)	NA	Waldo, OH	Rural	87	9	background site
	3	0	ND(0.04-0.15)	NA	Albany, NY	Urban	87-88	10	
	1	0	ND(0.06)	NA	Binghamton, NY	Urban	88	10	
	2	0	ND(0.05-0.18)	NA	Utica, NY	Urban	88	10	
	2	0	ND(0.04-0.21)	NA	Niagara Falls, NY	Industrial	87	10	
	1	1	0.0004	0.0004	Stockholm	Urban	89	11	
	1	1	0.0007	0.0007	Stockholm	Suburban	89	11	
	1	1	0.0002	0.0002	Stockholm	Rural	89	11	
	1	1	0.0001	0.0001	Stockholm	Coastal	89	11	
	7	0	ND(0.004-0.023)	NA	Reseda, CA	Urban	87-89	12	mostly residential
	1	0	ND(0.030)	NA	Commerce, CA	Urban	87	12	near freeway

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
2,3,7,8-TCDD (continued)	6	0	ND(0.0026-0.048)	NA	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	0	ND(0.0106-0.045)	NA	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	0	ND(0.0070-0.051)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	1	ND-0.034	0.017	Cal Transit, CA	Urban	88-89	12	near highway
	2	0	ND(0.022-0.039)	NA	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	1	ND-0.0086	0.0079	West Long Beach, CA	Urban	88-89	12	mostly residential area
	20	13	ND-0.003	0.00123	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	1	ND-0.001	0.000375	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	4	ND-0.026	0.0048	Franklin County, OH	Urban	95	14	
	3	0	ND	NA	Franklin County, OH	Background	95	14	
	2	2	0.012-0.026	0.019	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	0.0078	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.0001-0.003	0.00076	Various U.S. Sites	Rural	98-99	17	background
TCDDs	16	3	ND-0.18	0.04	Niagra Falls, NY	Urban	86-87	1	
	16	12	ND-10.12	0.99	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	7	NR	ND-0.54	0.20	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	27	20	ND-0.07	0.03	Wallingford, CT	Urban	88	5	
	1	1	0.05	0.05	Stockholm, Sweden	Urban	89	7	
	2	2	0.10-0.22	0.16	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	0.21-1.5	0.86	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	1	ND-0.18	0.12	Akron, OH	Industrial	87	9	near incinerators
	2	0	ND(0.24-0.82)	NA	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.15)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	0	ND(0.058)	NA	Waldo, OH	Rural	87	9	background Site
	3	0	ND(0.04-0.15)	NA	Albany, NY	Urban	87-88	10	
	1	0	ND(0.06)	NA	Binghamton, NY	Urban	88	10	

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	2	0	ND(0.05-0.18)	NA	Utica, NY	Urban	88	10	

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
TCDDs (continued)	2	0	ND(0.04-0.21)	NA	Niagara Falls, NY	Industrial	87	10	
	1	1	0.05	0.05	Stockholm	Urban	89	11	
	1	1	0.026	0.026	Stockholm	Suburban	89	11	
	1	1	0.031	0.031	Stockholm	Rural	89	11	
	1	1	0.0057	0.0057	Stockholm	Coastal	89	11	
	7	0	ND(0.0050-0.046)	NA	Reseda, CA	Urban	87-89	12	mostly residential
	1	0	ND(0.030)	NA	Commerce, CA	Urban	87	12	near freeway
	6	0	ND(0.0026-0.075)	NA	North Long Beach,CA	Urban	87-89	12	mostly residential
	5	0	ND(0.0106-0.093)	NA	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	0	ND(0.0090-0.051)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	1	ND-0.280	0.0788	Cak Transit, CA	Urban	88-89	12	near highway
	2	1	ND-0.0230	0.0170	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	1	ND-0.0402	0.0237	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.007-0.121	0.0457	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.007-0.032	0.017	Connecticut	Rural	93-94	13	near resource recovery facilities
	16	NR	NR	0.53	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
Pentachlorodibenzo-p-dioxins (MW=356.42)									
1,2,3,7,8-PeCDD	3	0	ND(0.01-0.02)	NA	Niagra Falls, NY	Urban	86-87	1	
	3	1	ND-0.49	0.17	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	ND(0.02)	NA	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.039)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.07	0.02	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	9	ND-0.02	0.006	Wallingford, CT	Urban	88	5	
	NR	NR	ND(0.03)	NA	Rutland, VT	Urban	NR	6	
	NR	NR	ND(0.01)	NA	Durham, NC	Urban	NR	6	
	1	1	0.006	0.006	Stockholm, Sweden	Urban	89	7	

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	2	1	ND-0.28	0.14	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,7,8-PeCDD	2	2	0.22-0.60	0.41	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
(continued)	3	0	ND(0.034-0.27)	NA	Akron, OH	Industrial	87	9	near incinerators
	2	0	ND(0.047-0.06)	NA	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.082)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	0	ND(0.033)	NA	Waldo, OH	Rural	87	9	background site
	1	1	0.006	0.006	Stockholm	Urban	89	11	
	1	1	0.0038	0.0038	Stockholm	Suburban	89	11	
	1	1	0.0014	0.0014	Stockholm	Rural	89	11	
	1	1	0.0007	0.0007	Stockholm	Coastal	89	11	
	1	1	0.0004	0.0004	Bloomington, IN	Urban	86	15	
	7	1	ND-0.14	0.0332	Reseda, CA	Urban	87-89	12	mostly residential
	1	1	0.120	0.120	Commerce, CA	Urban	87	12	near freeway
	6	0	ND(0.0060-0.095)	NA	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	0	ND(0.048-0.93)	NA	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	0	ND(0.0062-0.058)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	0	ND(0.0126-0.081)	NA	Cal Transit, CA	Urban	88-89	12	near highway
	2	0	ND(0.0090-0.054)	NA	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	0	ND(0.043-0.088)	NA	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	19	ND-0.014	0.00633	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	3	ND-0.004	0.00213	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	8	ND-0.021	0.0103	Franklin County, OH	Urban	95	14	
	3	1	ND-0.01112	0.0052	Franklin County, OH	Background	95	14	
	2	2	0.042-0.082	0.0619	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	0.051	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00043-0.023	0.0043	Various U.S. Sites	Rural	98-99	17	background

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
PeCDDs	16	1	ND-0.05	0.02	Niagra Falls, NY	Urban	86-87	1	
	16	11	ND-11.16	1.04	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	7	NR	0.01-0.66	0.24	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	21	ND-0.15	0.05	Wallingford, CT	Urban	88	5	
	1	1	0.11	0.11	Stockholm, Sweden	Urban	89	7	
	2	2	0.07-1.3	0.68	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	2.4-5.0	3.70	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	1	ND-0.10	0.097	Akron, OH	Industrial	87	9	near incinerators
	2	0	ND(0.47-0.06)	NA	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.082)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	0	ND(0.033)	NA	Waldo, OH	Rural	87	9	background site
	3	0	ND(0.04-0.21)	NA	Albany, NY	Urban	87-88	10	
	1	0	ND(0.11)	NA	Binghamton, NY	Urban	88	10	
	2	0	ND(0.07-0.34)	NA	Utica, NY	Urban	88	10	
	2	0	ND(0.07-0.34)	NA	Niagara, NY	Industrial	87	10	
	1	1	0.110	0.110	Stockholm	Urban	89	11	
	1	1	0.079	0.079	Stockholm	Suburban	89	11	
	1	1	0.04	0.04	Stockholm	Rural	89	11	
	1	1	0.019	0.019	Stockholm	Coastal	89	11	
	7	2	ND-0.89	0.143	Reseda, CA	Urban	87-89	12	mostly residential
	1	1	0.57	0.57	Commerce, CA	Urban	87	12	near freeway
	6	2	ND-0.81	0.150	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	0	ND(0.063-0.93)	NA	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	0	ND(0.0062-0.047)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	1	ND-0.18	0.0618	Cal Transit, CA	Urban	88-89	12	near highway
	2	1	ND-0.042	0.0345	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	2	0	ND(0.045-0.088)	NA	West Long Beach, CA	Urban	88-89	12	mostly residential
PeCDDs (continued)	20	19	ND-0.224	0.0801	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.009-0.043	0.0253	Connecticut	Rural	93-94	13	near resource recovery facilities
	16	NR	NR	0.57	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
Hexachlorodibenzo-p-dioxins (MW=390.87)									
1,2,3,4,7,8-HxCDD	3	0	ND(0.01-0.02)	NA	Niagra Falls, NY	Urban	86-87	1	
	3	3	0.04-0.64	0.24	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.01	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.076)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.08	0.03	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	8	ND-0.03	0.01	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.05	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.01	Durham, NC	Urban	NR	6	
	1	1	0.004	0.004	Stockholm, Sweden	Urban	89	7	
	2	0	ND(0.08-0.17)	NA	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	0.19-1.0	0.60	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	3	0.032-0.055	0.041	Akron, OH	Industrial	87	9	near incinerators
	2	0	ND(0.028-0.039)	NA	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.032)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.031	0.031	Waldo, OH	Rural	87	9	background site
	1	1	0.004	0.004	Stockholm	Urban	89	11	
	1	1	0.0028	0.0028	Stockholm	Suburban	89	11	
	1	1	0.0012	0.0012	Stockholm	Rural	89	11	
	1	1	0.0006	0.0006	Stockholm	Coastal	89	11	
	1	1	0.0023	0.0023	Bloomington, IN	Urban	86	15	
	7	3	ND-0.20	0.0588	Reseda, CA	Urban	87-89	12	mostly residential

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	1	1	0.12	0.12	Commerce, CA	Urban	87	12	near freeway
	6	1	ND-0.14	0.0402	North Long Beach, CA	Urban	87-89	12	mostly residential
1,2,3,4,7,8-HxCDD	5	1	ND-0.043	0.0406	San Bernadino, CA	Urban	87-89	12	mostly residential
(continued)	7	0	ND(0.012-0.10)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	0	ND(0.0078-0.074)	NA	Cal Transit, CA	Urban	88-89	12	near highway
	2	0	ND(0.015-0.025)	NA	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	0	ND(0.038-0.043)	NA	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.001-0.022	0.0088	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	3	ND-0.007	0.00338	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	8	ND-0.04	0.0142	Franklin County, OH	Urban	95	14	
	3	1	ND-0.0152	0.0079	Franklin County, OH	Background	95	14	
	2	2	0.053-0.109	0.081	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	0.096	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00058-0.027	0.0054	Various U.S. Sites	Rural	98-99	17	background
1,2,3,6,7,8-HxCDD	3	1	ND-0.03	0.02	Niagra Falls, NY	Urban	86-87	1	
	3	3	0.05-1.06	0.39	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.02	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.083)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.13	0.04	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	22	ND-0.06	0.02	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.07	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.01	Durham, NC	Urban	NR	6	
	1	1	0.008	0.008	Stockholm, Sweden	Urban	89	7	
	2	2	0.23-0.66	0.44	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	0.71-2.2	1.46	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	3	0.052-0.053	0.053	Akron, OH	Industrial	87	9	near incinerators

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	2	1	ND-0.078	0.046	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.032)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.025	0.025	Waldo, OH	Rural	87	9	background site
1,2,3,6,7,8-HxCDD (continued)	1	1	0.0076	0.0076	Stockholm	Urban	89	11	
	1	1	0.0062	0.0062	Stockholm	Suburban	89	11	
	1	1	0.0023	0.0023	Stockholm	Rural	89	11	
	1	1	0.0009	0.0009	Stockholm	Coastal	89	11	
	1	1	0.0029	0.0029	Bloomington, IN	Urban	86	15	
	7	3	ND-0.35	0.0801	Reseda, CA	Urban	87-89	12	mostly residential
	1	1	0.25	0.25	Commerce, CA	Urban	87	12	near freeway
	6	1	ND-0.39	0.0833	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	1	ND-0.15	0.0586	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	0	ND(0.0070-0.097)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	1	ND-0.065	0.0383	Cal Transit, CA	Urban	88-89	12	near highway
	2	0	ND(0.015-0.025)	NA	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	0	ND(0.019-0.032)	NA	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.002-0.034	0.0145	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.002-0.010	0.005	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	12	ND-0.05	0.026	Franklin County, OH	Urban	95	14	
	3	1	ND-0.0191	0.0093	Franklin County, OH	Background	95	14	
	2	2	0.06-0.13	0.095	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	0.22	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.0011-0.044	0.0097	Various U.S. Sites	Rural	98-99	17	background
1,2,3,7,8,9-HxCDD	3	1	ND-0.03	0.02	Niagra Falls, NY	Urban	86-87	1	
	3	2	ND-0.11	0.06	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.02	Greenbay, WI	Urban	NR	2	

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	1	0	ND(0.086)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.25	0.08	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	18	ND-0.07	0.03	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.05	Rutland, VT	Urban	NR	6	
1,2,3,7,8,9-HxCDD	NR	NR	ND(0.01)	NA	Durham, NC	Urban	NR	6	
(continued)	1	0	ND(0.001)	NA	Stockholm, Sweden	Urban	89	7	
	2	0	ND(0.08-0.17)	NA	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	0.36-5.2	2.78	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	3	0.017-0.050	0.031	Akron, OH	Industrial	87	9	near incinerators
	2	1	ND-0.064	0.039	Columbus, OH	Industrial	87	9	near incinerators
	1	0	ND(0.032)	NA	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.025	0.025	Waldo, OH	Rural	87	9	background site
	1	1	0.0065	0.0065	Stockholm	Urban	89	11	
	1	1	0.0052	0.0052	Stockholm	Suburban	89	11	
	1	1	0.0018	0.0018	Stockholm	Rural	89	11	
	1	1	0.0013	0.0013	Stockholm	Coastal	89	11	
	1	1	0.0013	0.0013	Bloomington, IN	Urban	86	15	
	7	3	ND-0.35	0.1198	Reseda, CA	Urban	87-89	12	mostly residential
	1	1	0.27	0.27	Commerce, CA	Urban	87	12	near freeway
	6	1	ND-0.35	0.0758	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	1	ND-0.10	0.0499	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	0	ND(0.009-0.12)	NA	El Toro, CA	Urban	87-88	12	mostly residential
	4	0	ND(0.023-0.074)	NA	Cal Transit, CA	Urban	88-89	12	near highway
	2	0	ND(0.015-0.019)	NA	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	0	ND(0.019-0.040)	NA	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.002-0.027	0.0123	Connecticut	Urban	93-94	13	near resource recovery facilities

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	4	3	ND-0.011	0.00463	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	11	ND-0.046	0.025	Franklin County, OH	Urban	95	14	
	3	1	ND-0.023	0.0135	Franklin County, OH	Background	95	14	
	2	2	0.06-0.11	0.09	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	0.18	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
1,2,3,7,8,9-HxCDD (continued)	53	53	0.00046-0.041	0.0093	Various U.S. Sites	Rural	98-99	17	background
HxCDDs	16	11	ND-0.23	0.08	Niagra Falls, NY	Urban	86-87	1	
	16	12	ND-12.16	1.69	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	7	NR	ND-2.17	0.72	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	27	ND-0.68	0.26	Wallingford, CT	Urban	88	5	
	1	1	0.10	0.10	Stockholm, Sweden	Urban	89	7	
	2	2	0.74-2.7	1.72	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	5.3-24	14.6	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	3	0.6-0.63	0.62	Akron, OH	Industrial	87	9	near incinerators
	2	2	0.43-0.78	0.60	Columbus, OH	Industrial	87	9	near incinerators
	1	1	0.15	0.15	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.33	0.33	Waldo, OH	Rural	87	9	background site
	3	1	ND(0.34)-0.13	0.125	Albany, NY	Urban	NR	10	
	1	0	ND(0.16)	NA	Binghamton, NY	Urban	NR	10	
	2	1	ND(0.55)-0.1	0.188	Utica, NY	Urban	NR	10	
	2	1	ND(0.11)-0.17	0.112	Niagara Falls, NY	Industrial	NR	10	
	1	1	0.096	0.096	Stockholm	Urban	89	11	
	1	1	0.082	0.082	Stockholm	Suburban	89	11	
	1	1	0.03	0.03	Stockholm	Rural	89	11	
	1	1	0.014	0.014	Stockholm	Coastal	89	11	
	7	7	0.062-3.0	0.988	Reseda, CA	Urban	87-89	12	mostly residential

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	1	1	2.00	2.00	Commerce, CA	Urban	87	12	near freeway
	6	4	ND-3.2	0.640	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	2	ND-0.77	0.197	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	4	ND-0.11	0.0424	El Toro, CA	Urban	87-88	12	mostly residential
	4	2	ND-0.27	0.153	Cal Transit, CA	Urban	88-89	12	near highway
HxCDDs (continued)	2	1	ND-0.14	0.10	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	2	0.16-0.32	0.241	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.017-0.471	0.177	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.020-0.122	0.0615	Connecticut	Rural	93-94	13	near resource recovery facilities
	16	NR	NR	2.41	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
Heptachlorodibenzo-p-dioxins (MW=425.31)									
1,2,3,4,6,7,8-HpCDD	3	3	0.34-0.51	0.41	Niagra Falls, NY	Urban	86-87	1	
	3	2	ND-5.43	2.0	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.11	Greenbay, WI	Urban	NR	2	
	1	1	0.25	0.25	Los Angeles, CA	Urban	87	3	
	7	NR	0.02-1.07	0.48	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	23	ND-0.73	0.29	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.41	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.04	Durham, NC	Urban	NR	6	
	1	1	0.10	NA	Stockholm, Sweden	Urban	89	7	
	3	3	0.52-0.57	0.54	Akron, OH	Industrial	87	9	near incinerators
	2	2	0.26-0.52	0.39	Columbus, OH	Industrial	87	9	near incinerators
	1	1	0.32	0.32	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.24	0.24	Waldo, OH	Rural	87	9	background site
	1	1	0.1	0.1	Stockholm	Urban	89	11	
	1	1	0.091	0.091	Stockholm	Suburban	89	11	

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	1	1	0.027	0.027	Stockholm	Rural	89	11	
	1	1	0.012	0.012	Stockholm	Coastal	89	11	
	1	1	0.0051	0.0051	Bloomington, IN	Urban	86	15	
	7	7	0.11-8.40	2.44	Reseda, CA	Urban	87-89	12	mostly residential
	1	1	2.70	2.70	Commerce, CA	Urban	87	12	near freeway
	6	6	0.21-3.50	0.795	North Long Beach, CA	Urban	87-89	12	mostly residential
1,2,3,4,6,7,8-HpCDD	5	5	0.21-1.20	0.582	San Bernadino, CA	Urban	87-89	12	mostly residential
(continued)	7	4	ND-0.26	0.138	El Toro, CA	Urban	87-88	12	mostly residential
	4	4	0.41-0.87	0.540	Cal. Transit, CA	Urban	88-89	12	near highway
	2	2	0.19-0.22	0.205	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	2	0.30-0.40	0.351	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.019-0.314	0.140	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.016-0.159	0.0673	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	14	0.11-0.40	0.23	Franklin County, OH	Urban	95	14	
	3	3	0.197-0.265	0.2273	Franklin County, OH	Background	95	14	
	2	2	0.4-0.87	0.63	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	2.95	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.012-0.63	0.13	Various U.S. Sites	Rural	98-99	17	background
HpCDDs	16	14	ND-0.86	0.44	Niagra Falls, NY	Urban	86-87	1	
	15	15	0.24-9.78	2.60	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	7	NR	0.02-2.19	1.02	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	26	ND-1.48	0.61	Wallingford, CT	Urban	88	5	
	1	1	0.20	0.20	Stockholm, Sweden	Urban	89	7	
	2	2	0.6-3.4	2.0	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	5.3-15	10.2	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
	3	3	1.00-1.10	1.07	Akron, OH	Industrial	87	9	near incinerators

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	2	2	0.41-1.00	0.70	Columbus, OH	Industrial	87	9	near incinerators
	1	1	0.56	0.56	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.48	0.48	Waldo, OH	Rural	87	9	background site
	3	2	0.28-0.69	0.44	Albany, NY	Urban	NR	10	
	1	1	0.48	0.48	Binghamton, NY	Urban	NR	10	
	2	1	ND(0.77)-0.3	0.342	Utica, NY	Urban	NR	10	
	2	2	0.49-0.56	0.525	Niagara Falls, NY	Industrial	NR	10	
HpCDDs (continued)	1	1	0.2	0.2	Stockholm	Urban	89	11	
	1	1	0.19	0.19	Stockholm	Suburban	89	11	
	1	1	0.062	0.062	Stockholm	Rural	89	11	
	1	1	0.03	0.03	Stockholm	Coastal	89	11	
	7	7	0.24-8.90	4.94	Reseda, CA	Urban	87-89	12	mostly residential
	1	1	5.30	5.30	Commerce, CA	Urban	87	12	near freeway
	6	6	0.24-7.20	1.61	North Long Beach, CA	Urban	87-89	12	mostly residential
	5	5	0.43-1.60	1.06	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	4	ND-0.46	0.246	El Toro, CA	Urban	87-88	12	mostly residential
	4	4	0.66-1.96	1.07	Cal. Transit, CA	Urban	88-89	12	near highway
	2	2	0.46-0.48	0.467	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer
	2	2	0.70-0.78	0.739	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.039-0.628	0.279	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.033-0.317	0.136	Connecticut	Rural	93-94	13	near resource recovery facilities
	16	NR	NR	5.39	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
Octachlorodibenzo-p-dioxin (MW=460.76)									
1,2,3,4,6,7,8,9-OCDD	16	15	ND-5.79	1.14	Niagra Falls, NY	Urban	86-87	1	
	14	14	0.39-8.88	2.94	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.30	Greenbay, WI	Urban	NR	2	

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	1	1	1.9	1.9	Los Angeles, CA	Urban	87	3	
	7	NR	0.17-5.55	2.10	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	16	15	ND-29.5	5.53	Wallingford, CT	Urban	88	5	
	NR	NR	NR	1.10	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.13	Durham, NC	Urban	NR	6	
	1	1	0.23	0.23	Stockholm, Sweden	Urban	89	7	
	2	2	0.37-6.4	3.38	Hamburg, Germany	Urban	NR	8	urban air & inside traffic tunnel
	2	2	7.4-40	23.7	Hamburg, Germany	Urban	NR	8	downwind incinerator & industrial complex
1,2,3,4,6,7,8,9-OCDD (continued)	3	3	1.00-1.20	1.13	Akron, OH	Industrial	87	9	near incinerators
	2	2	0.51-1.10	0.80	Columbus, OH	Industrial	87	9	near incinerators
	1	1	0.96	0.96	Columbus, OH	Urban	87	9	next to interstate highway
	1	1	0.50	0.50	Waldo, OH	Rural	87	9	background site
	3	2	0.6-3.16	1.53	Albany, NY	Urban	NR	10	
	1	1	1.35	1.35	Binghamton, NY	Urban	NR	10	
	2	2	0.84-1.58	1.21	Utica, NY	Urban	NR	10	
	2	2	1.4-1.6	1.5	Niagara Falls, NY	Insdustrial	NR	10	
	1	1	0.23	0.23	Stockholm	Urban	89	11	
	1	1	0.23	0.23	Stockholm	Suburban	89	11	
	1	1	0.068	0.068	Stockholm	Rural	89	11	
	1	1	0.041	0.041	Stockholm	Coastal	89	11	
	6	6	0.43-17.0	5.36	Reseda, CA	Urban	87-89	12	mostly residential
	5	5	0.68-1.90	1.42	North Long Beach, CA	Urban	87-89	12	near freeway
	5	5	0.93-8.60	3.08	San Bernadino, CA	Urban	87-89	12	mostly residential
	7	6	ND-2.16	1.05	El Toro, CA	Urban	87-88	12	mostly residential
	4	4	1.80-3.73	2.37	Cal. Transit, CA	Urban	88-89	12	near highway
	2	2	0.48-1.60	1.04	Carson, CA	Industrial	88-89	12	on site at gas cooking equipment manufacturer

Table B-1. Environmental Levels of Dioxins in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	2	2	2.05-3.83	2.94	West Long Beach, CA	Urban	88-89	12	mostly residential
	20	20	0.072-0.839	0.436	Connecticut	Urban	93-94	13	near resource recovery facilities
	4	4	0.056-0.451	0.215	Connecticut	Rural	93-94	13	near resource recovery facilities
	14	14	0.431-1.56	0.952	Franklin County, OH	Urban	95	14	
	3	3	0.634-1.14	0.9037	Franklin County, OH	Background	95	14	
	2	2	1.17-2.36	1.77	Franklin County, OH	Industrial	95	14	near waste to energy facility
	16	NR	NR	9.55	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.058-1.7	0.44	Various U.S. Sites	Rural	98-99	17	background

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects;
NA = Not applicable;
ND = Non-detect;
NR = Not reported.

Sources:

1. Smith et al. (1989)
2. Harless et al. (1990)
3. Maisel and Hunt (1990)
4. Hunt and Maisel (1990)
5. CDEP (1988)
6. Harless et al. (1991)
7. Näf et al. (1990)
8. Rappe and Kjeller (1987)
9. Edgerton et al. (1989)
10. Smith et al. (1990)
11. Broman et al. (1991)
12. Hunt et al. (1990)
13. CDEP (1995)
14. OEPA (1995)
15. Eitzer and Hites (1989)
16. Hunt et al. (1997)
17. Cleverly et al. (2000)

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m³)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
Tetrachlorodibenzofurans (MW=305.98)									
2,3,7,8-TCDF	3	3	0.04-0.14	0.09	Niagra Falls, NY	Urban	86-87	1	
	3	3	0.28-3.81	1.47	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.03	Greenbay, WI	Urban	NR	2	
	1	1	0.02	0.02	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.20	0.08	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	22	ND-0.10	0.04	Wallingford, CT	Urban	88	5	
	NR	NR	ND(0.1)	NA	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.03	Durham, NC	Urban	NR	6	
	2	2	0.04-0.72	0.38	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	0.18-0.38	0.28	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.19-0.20	0.20	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.32-0.49	0.40	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.13)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.13	0.13	Waldo, OH	Rural	87	8	background site
	3	3	0.5-1.24	0.85	Albany, NY	Urban	87-89	9	
	1	1	0.18	0.18	Binghamton, NY	Urban	88	9	
	2	2	1.07-1.23	1.15	Utica, NY	Urban	88	9	
	2	0	ND(0.04-0.2)	NA	Niagra Falls, NY	Industrial	87	9	
	7	4	ND-0.046	0.0271	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.11	0.11	Commerce, CA	Urban	87	10	near freeway
	6	4	ND-0.039	0.0198	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	4	ND-0.091	0.0383	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	3	ND-0.027	0.0146	El Toro, CA	Urban	87-88	10	mostly residential
	4	2	ND-0.21	0.0687	Cal. Transit, CA	Urban	88-89	10	near highway
	2	1	ND-0.024	0.0137	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	2	0.019-0.48	0.250	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.002-0.024	0.0093	Connecticut	Urban	93-94	11	near resource recovery facilities

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	4	4	0.002-0.004	0.00325	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	12	ND-0.034	0.014	Franklin County, OH	Urban	95	12	
2,3,7,8,-TCDF	3	0	ND	NA	Franklin County, OH	Rural	95	12	
(continued)	2	2	0.032-0.069	0.051	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.033	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00021-0.0057	0.0017	Various U.S. Sites	Rural	98-99	17	background
TCDFs	16	10	ND-0.66	0.23	Niagra Falls, NY	Urban	86-87	1	
	16	16	0.18-17.4	3.25	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	7	NR	ND-2.29	0.86	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	26	ND-0.86	0.38	Wallingford, CT	Urban	88	5	
	1	1	0.33	0.33	Stockholm, Sweden	Urban	89	13	
	2	2	0.36-6.2	3.28	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	3.3-4.9	4.1	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.99-1.50	1.23	Akron, OH	Industrial	87	8	near incinerators
	2	2	1.90-3.80	2.85	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.13)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.89	0.89	Waldo, OH	Rural	87	8	background site
	3	3	2.08-5.46	3.64	Albany, NY	Urban	87-88	9	
	1	1	0.94	0.94	Binghamton, NY	Urban	88	9	
	2	2	5.87-8.81	7.34	Utica, NY	Urban	88	9	
	2	2	1.10-1.20	1.15	Niagra Falls, NY	Industrial	87	9	
	1	1	0.33	0.33	Stockholm	Urban	89	14	
	1	1	0.20	0.20	Stockholm	Urban	89	14	
	1	1	0.08	0.08	Stockholm	Urban	89	14	
	1	1	0.048	0.048	Stockholm	Urban	89	14	
	7	5	ND-1.10	0.275	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	1.40	1.40	Commerce, CA	Urban	87	10	near freeway
	6	4	ND-1.00	0.432	North Long Beach, CA	Urban	87-89	10	mostly residential

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	5	5	0.024-0.98	0.430	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	4	ND-0.32	0.147	El Toro, CA	Urban	87-88	10	mostly residential
	4	2	ND-0.87	0.418	Cal. Transit, CA	Urban	88-89	10	near freeway
	2	2	0.089-0.32	0.206	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
TCDFs (continued)	2	2	0.15-0.48	0.316	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.086-0.465	0.264	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.090-0.134	0.108	Connecticut	Rural	93-94	11	near resource recovery facilities
	16	NR	NR	1.57	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
1,2,3,7,8-PeCDF (MW=340.42)									
1,2,3,7,8-PeCDF	3	0	ND(0.01)	NA	Niagra Falls, NY	Urban	86-87	1	
	3	3	0.03-0.61	0.25	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.05	Greenbay, WI	Urban	NR	2	
	1	1	0.08	0.08	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.10	0.03	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	9	ND-0.02	0.01	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.03	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.01	Durham, NC	Urban	NR	6	
	3	3	0.026-0.033	0.029	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.032-0.057	0.044	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.036)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.021	0.021	Waldo, OH	Rural	87	8	background site
	7	1	ND-0.14	0.0327	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.092	0.0920	Commerce, CA	Urban	87	10	near freeway
	6	1	ND-0.13	0.0383	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	1	ND-1.90	0.399	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	2	ND-0.077	0.0349	El Toro, CA	Urban	87-89	10	mostly residential
	4	1	ND-0.053	0.0346	Cal Transit, CA	Urban	88-89	10	near highway
	2	0	ND(0.010-0.015)	NA	Carson, CA	Industrial	88-89	10	On site at gas cooking equipment manufacturer

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	2	1	ND-0.022	0.0161	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.003-0.019	0.00925	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.003-0.004	0.00325	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	12	ND-0.046	0.023	Franklin County, OH	Urban	95	12	
	3	1	ND-0.01354	0.0065	Franklin County, OH	Rural	95	12	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
1,2,3,7,8-PeCDF	2	2	0.08-0.16	0.12	Franklin County, OH	Industrial	95	12	near waste to energy facility
(continued)	16	NR	NR	0.052	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00033-0.0073	0.0019	Various U.S. Sites	Rural	98-99	17	background
2,3,4,7,8-PeCDF	3	0	ND(0.01-0.02)	NA	Niagra Falls, NY	Urban	86-87	1	
	3	2	ND-1.92	0.68	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.04	Greenbay, WI	Urban	NR	2	
	1	1	0.08	0.08	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.16	0.05	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	16	ND-0.04	0.02	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.20	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.01	Durham, NC	Urban	NR	6	
	1	1	0.02	0.02	Stockholm, Sweden	Urban	89	13	
	1	1	0.04	0.04	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	0.43-1.2	0.82	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.032-0.042	0.036	Akron, OH	Industrial	87	8	near incinerators
	2	1	ND-0.089	0.050	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.036)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	0	ND(0.033)	NA	Waldo, OH	Rural	87	8	background site
	1	1	0.018	0.018	Stockholm	Urban	89	14	
	1	1	0.0078	0.0078	Stockholm	Urban	89	14	
	1	1	0.0021	0.0021	Stockholm	Urban	89	14	
	1	1	0.0012	0.0012	Stockholm	Urban	89	14	
	7	1	ND-0.11	0.0295	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.0890	0.0890	Commerce, CA	Urban	87	10	near freeway
	6	1	ND-0.13	0.0393	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	1	ND-0.10	0.0379	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	2	ND-0.08	0.0363	El Toro, CA	Urban	87-88	10	mostly residential
	4	1	ND-0.15	0.0516	Cal. Transit, CA	Urban	88-89	10	near highway

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	2	0	ND(0.010-0.012)	NA	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	0	ND(0.010-0.012)	NA	West Long Beach, CA	Urban	88-89	10	mostly residential
2,3,4,7,8-PeCDF	20	20	0.003-0.038	0.0159	Connecticut	Urban	93-94	11	near resource recovery facilities
(continued)	4	4	0.004-0.006	0.00475	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	13	ND-0.055	0.025	Franklin County, OH	Urban	95	12	
	3	2	ND-0.01236	0.0095	Franklin County, OH	Rural	95	12	
	2	2	0.11-0.23	0.168	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.11	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00051-0.011	0.0032	Various U.S. Sites	Rural	98-99	17	background
PeCDFs	16	8	ND-0.41	0.12	Niagra Falls, NY	Urban	86-87	1	
	16	15	ND-12.4	2.08	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	7	NR	ND-1.77	0.57	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	28	0.04-0.71	0.29	Wallingford, CT	Urban	88	5	
	1	1	0.17	0.17	Stockholm, Sweden	Urban	89	13	
	2	2	0.51-4.1	2.30	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	5-10	7.5	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.53-0.66	0.59	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.69-1.30	1.00	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.036)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.50	0.50	Waldo, OH	Rural	87	8	background site
	3	3	1.24-3.26	1.96	Albany, NY	Urban	87-88	9	
	1	1	0.25	0.25	Binghamton, NY	Urban	88	9	
	2	2	2.71-3.61	3.16	Utica, NY	Urban	88	9	
	2	2	0.31-0.39	0.35	Niagra Falls, NY	Industrial	87	9	
	1	1	0.170	0.17	Stockholm	Urban	89	14	
	1	1	0.094	0.094	Stockholm	Urban	89	14	
	1	1	0.046	0.046	Stockholm	Urban	89	14	
	1	1	0.026	0.026	Stockholm	Urban	89	14	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	7	5	ND-1.90	0.402	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	1.00	1.00	Commerce, CA	Urban	87	10	near freeway
	6	4	ND-1.50	0.450	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	2	ND-2.70	0.582	San Bernadino, CA	Urban	87-89	10	mostly residential
PeCDFs (continued)	7	4	ND-0.57	0.247	El Toro, CA	Urban	87-88	10	mostly residential
	4	2	ND-1.60	0.524	Cal. Transit, CA	Urban	88-89	10	near highway
	2	2	0.25-0.28	0.265	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	2	0.23-0.24	0.235	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.057-0.451	0.199	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.057-0.078	0.0663	Connecticut	Rural	93-94	11	near resource recovery facilities
	16	NR	NR	1.43	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
Hexachlorodibenzofurans (MW=374.87)									
1,2,3,4,7,8-HxCDF	3	1	ND-0.06	0.02	Niagra Falls, NY	Urban	86-87	1	
	3	2	ND-0.22	0.11	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.03	Greenbay, WI	Urban	NR	2	
	1	1	0.15	0.15	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.41	0.11	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	21	ND-0.13	0.05	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.04	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.02	Durham, NC	Urban	NR	6	
	3	3	0.053-0.10	0.083	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.060-0.27	0.16	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.034)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.098	0.098	Waldo, OH	Rural	87	8	background site
	7	1	ND-0.27	0.0586	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.180	0.180	Commerce, CA	Urban	87	10	near freeway
	6	1	ND-0.25	0.0574	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	2	ND-0.18	0.0821	San Bernadino, CA	Urban	87-89	10	mostly residential

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	7	2	ND-0.15	0.0499	El Toro, CA	Urban	87-88	10	mostly residential
	4	0	ND(0.039-0.15)	NA	Cal. Transit, CA	Urban	88-89	10	near highway
	2	0	ND(0.038-0.054)	NA	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	0	ND(0.029-0.085)	NA	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.004-0.054	0.0198	Connecticut	Urban	93-94	11	near resource recovery facilities

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8-HxCDF	4	4	0.004-0.008	0.006	Connecticut	Rural	93-94	11	near resource recovery facilities
(continued)	14	13	ND-0.134	0.049	Franklin County, OH	Urban	95	12	
	3	1	ND-0.0261	0.0134	Franklin County, OH	Rural	95	12	
	2	2	0.123-0.286	0.205	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.15	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00071-0.016	0.0038	Various U.S. Sites	Rural	98-99	17	background
1,2,3,6,7,8-HxCDF	3	1	ND-0.02	0.01	Niagra Falls, NY	Urban	86-87	1	
	3	3	0.05-1.17	0.45	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.03	Greenbay, WI	Urban	NR	2	
	1	1	0.25	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.15	0.04	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	17	ND-0.07	0.03	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.03	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.02	Durham, NC	Urban	NR	6	
	1	1	0.008	0.008	Stockholm, Sweden	Urban	89	13	
	2	2	0.03-0.15	0.09	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	0.24-1.4	0.82	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.048-0.092	0.065	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.092-0.19	0.14	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.034)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.014	0.014	Waldo, OH	Rural	87	8	background site
	1	1	0.0078	0.0078	Stockholm	Urban	89	14	
	1	1	0.0059	0.0059	Stockholm	Urban	89	14	
	1	1	0.0024	0.0024	Stockholm	Urban	89	14	
	1	1	0.0014	0.0014	Stockholm	Urban	89	14	
	7	1	ND-0.80	0.130	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.41	0.410	Commerce, CA	Urban	87	10	near freeway
	6	1	ND-0.48	0.0931	North Long Beach, CA	Urban	87-89	10	mostly residential

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	5	1	ND-0.37	0.0977	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	2	ND-0.25	0.0689	El Toro, CA	Urban	87-88	10	mostly residential
1,2,3,6,7,8-HxCDF	4	0	ND(0.031-0.092)	NA	Cal. Transit, CA	Urban	88-89	10	near highway
(continued)	2	0	ND(0.030-0.036)	NA	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	0	ND(0.060-0.070)	NA	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.003-0.038	0.0161	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.003-0.007	0.005	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	14	0.0132-0.115	0.057	Franklin County, OH	Urban	95	12	
	3	1	ND-0.0243	0.0156	Franklin County, OH	Ruran	95	12	
	2	2	0.199-0.405	0.302	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.13	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00062-0.011	0.0035	Various U.S. Sites	Rural	98-99	17	background
1,2,3,7,8,9-HxCDF	3	0	ND(0.01-0.02)	NA	Niagra Falls, NY	Urban	86-87	1	
	3	1	ND-0.1	0.04	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.01	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.08)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.02	0.01	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	1	ND-0.003	0.003	Wallingford, CT	Urban	88	5	
	NR	NR	ND(0.03)	NA	Rutland, VT	Urban	NR	6	
	NR	NR	ND(0.01)	NA	Durham, NC	Urban	NR	6	
	1	1	0.0008	0.0008	Stockholm, Sweden	Urban	89	13	
	2	0	ND(0.01-0.05)	NA	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	1	ND-0.33	0.17	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.020-0.039	0.032	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.038-0.12	0.079	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.034)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.097	0.097	Waldo, OH	Rural	87	8	background site
	1	1	0.0008	0.0008	Stockholm	Urban	89	14	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	1	1	0.0006	0.0006	Stockholm	Urban	89	14	
	1	1	0.0003	0.0003	Stockholm	Urban	89	14	
	1	1	0.0004	0.0004	Stockholm	Urban	89	14	
	1	1	0.0001	0.0001	Bloomington, IN	Urban	86	15	
1,2,3,7,8,9-HxCDF	7	0	ND(0.0040-0.075)	NA	Reseda, CA	Urban	87-89	10	mostly residential
(continued)	1	0	ND(0.11)	NA	Commerce, CA	Urban	87	10	near freeway
	6	0	ND(0.010-0.043)	NA	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	0	ND(0.033-0.21)	NA	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	0	ND(0.015-0.083)	NA	El Toro, CA	Urban	87-88	10	mostly residential
	4	0	ND(0.0032-0.068)	NA	Cal. Transit, CA	Urban	88-89	10	near highway
	2	0	ND(0.0054-0.014)	NA	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	0	ND(0.040-0.086)	NA	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	19	ND-0.020	0.0072	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	3	ND-0.004	0.00213	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	1	ND-0.00528	0.003	Franklin County, OH	Urban	95	12	
	3	0	ND	NA	Franklin County, OH	Rural	95	12	
	2	0	ND	NA	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.21	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00018-0.0061	0.0014	Various U.S. Sites	Rural	98-99	17	background
2,3,4,6,7,8-HxCDF	3	1	ND-0.04	0.02	Niagra Falls, NY	Urban	86-87	1	
	3	2	ND-2.17	0.76	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	ND(0.01)	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.08)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.30	0.09	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	19	ND-0.10	0.04	Wallingford, CT	Urban	88	5	
	NR	NR	ND(0.03)	NA	Rutland, VT	Urban	NR	6	
	NR	NR	ND(0.01)	NA	Durham, NC	Urban	NR	6	
	1	1	0.005	0.005	Stockholm, Sweden	Urban	89	13	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	2	1	ND-0.05	0.03	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	0.21-0.8	0.50	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	0	ND(0.005-0.036)	NA	Akron, OH	Industrial	87	8	near incinerators
	2	0	ND(0.012-0.028)	NA	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.034)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	0	ND(.008)	NA	Waldo, OH	Rural	87	8	background site
2,3,4,6,7,8-HxCDF (continued)	1	1	0.0054	0.0054	Stockholm	Urban	89	14	
	1	1	0.0063	0.0063	Stockholm	Urban	89	14	
	1	1	0.002	0.002	Stockholm	Urban	89	14	
	1	1	0.0009	0.009	Stockholm	Urban	89	14	
	1	1	0.0016	0.0016	Bloomington, IN	Urban	86	15	
	7	1	ND-0.28	0.0551	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.180	0.180	Commerce, CA	Urban	87	10	near freeway
	6	1	ND-0.19	0.0474	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	1	ND-0.16	0.0584	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	0	ND(0.018-0.078)	NA	El Toro, CA	Urban	87-88	10	mostly residential
	4	0	ND(0.039-0.103)	NA	Cal. Transit, CA	Urban	88-89	10	near highway
	2	0	ND(0.014-0.021)	NA	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	0	ND(0.035-0.086)	NA	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.003-0.056	0.0215	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.004-0.009	0.00625	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	13	ND-0.08	0.0304	Franklin County, OH	Urban	95	12	
	3	1	ND-0.0174	0.0092	Franklin County, OH	Rural	95	12	
	2	2	0.122-0.255	0.189	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.078	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.00072-0.015	0.0044	Various U.S. Sites	Rural	98-99	17	background
HxCDFs	16	11	ND-0.58	0.14	Niagra Falls, NY	Urban	86-87	1	
	16	15	ND-10.2	1.96	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	7	NR	ND-2.15	0.58	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	28	0.03-1.57	0.49	Wallingford, CT	Urban	88	5	
	1	1	0.08	0.08	Stockholm, Sweden	Urban	89	13	
	2	2	0.18-1.1	0.64	Hamburg, Germany	Urban	87-88	7	urban air & inside traffic tunnel
	2	2	2.2-9.5	5.85	Hamburg, Germany	Industrial	88	7	downwind incinerator & industrial complex
	3	3	0.56-0.70	0.62	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.37-1.20	0.78	Columbus, OH	Industrial	87	8	near incinerators

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
HxCDFs (continued)	1	1	0.10	0.10	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.51	0.51	Waldo, OH	Rural	87	8	background site
	3	3	0.19-0.37	0.31	Albany, NY	Urban	87-88	9	
	1	0	ND(0.09)	NA	Binghamton, NY	Urban	88	9	
	2	1	ND(0.26)-0.46	0.295	Utica, NY	Urban	88	9	
	2	2	0.12-0.18	0.15	Niagra Falls, NY	Industrial	87	9	
	1	1	0.078	0.078	Stockholm	Urban	89	14	
	1	1	0.062	0.062	Stockholm	Urban	89	14	
	1	1	0.029	0.029	Stockholm	Urban	89	14	
	1	1	0.015	0.015	Stockholm	Urban	89	14	
	7	5	ND-2.00	0.415	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	1.1	1.10	Commerce, CA	Urban	87	10	near freeway
	6	4	ND-1.70	0.452	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	4	ND-0.90	0.606	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	4	ND-0.40	0.162	El Toro, CA	Urban	87-88	10	mostly residential
	4	3	ND-0.84	0.0341	Cal. Transit, CA	Urban	88-89	10	near highway
	2	2	0.19-0.27	0.0230	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	1	ND-0.35	0.200	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.038-0.426	0.181	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.041-0.078	0.055	Connecticut	Rural	93-94	11	near resource recovery facilities
	16	NR	NR	3.45	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
Heptachlorodibenzofurans (MW=409.31)									
1,2,3,4,6,7,8-HpCDF	3	1	ND-0.15	0.05	Niagra Falls, NY	Urban	86-87	1	
	3	3	0.26-5.43	2.08	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.08	Greenbay, WI	Urban	NR	2	
	1	0	ND(0.2)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.54	0.21	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	22	ND-0.80	0.26	Wallingford, CT	Urban	88	5	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	NR	NR	NR	0.12	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.02	Durham, NC	Urban	NR	6	
1,2,3,4,6,7,8-HpCDF	1	1	0.09	0.09	Stockholm, Sweden	Urban	89	13	
(continued)	3	3	0.22-0.25	0.24	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.20-0.47	0.34	Columbus, OH	Industrial	87	8	near incinerators
	1	1	0.087	0.087	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.22	0.22	Waldo, OH	Rural	87	8	background site
	1	1	0.087	0.087	Stockholm	Urban	89	14	
	1	1	0.055	0.055	Stockholm	Urban	89	14	
	1	1	0.028	0.028	Stockholm	Urban	89	14	
	1	1	0.011	0.011	Stockholm	Urban	89	14	
	1	1	0.0035	0.0035	Bloomington	Urban	86	15	
	7	3	ND-1.20	0.211	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.820	0.820	Commerce, CA	Urban	87	10	near freeway
	6	4	ND-1.10	0.276	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	3	ND-0.47	0.254	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	1	ND-0.13	0.0746	El Toro, CA	Urban	87-88	10	mostly residential
	4	3	ND-1.58	0.497	Cal. Transit, CA	Urban	88-89	10	near highway
	2	1	ND-0.20	0.110	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	1	ND-0.13	0.0733	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.012-0.164	0.0709	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.012-0.035	0.0228	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	13	ND-0.429	0.165	Franklin County, OH	Urban	95	12	
	3	2	ND-0.1	0.0612	Franklin County, OH	Rural	95	12	
	2	2	0.609-1.27	0.94	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.76	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.0037-0.064	0.02	Various U.S. Sites	Rural	98-99	17	background
1,2,3,4,7,8,9-HpCDF	NR	NR	NR	0.01	Greenbay, WI	Urban	NR	2	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
	1	0	ND(0.02)	NA	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.07	0.03	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	12	ND-0.30	0.03	Wallingford, CT	Urban	88	5	
	NR	NR	ND(0.01)	NA	Rutland, VT	Urban	NR	6	

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8,9-HpCDF	NR	NR	ND(0.01)	NA	Durham, NC	Urban	NR	6	
(continued)	1	0	ND(0.001)	NA	Stockholm, Sweden	Urban	89	13	
	3	1	ND-0.031	0.020	Akron, OH	Industrial	87	8	near incinerators
	2	0	ND(0.015-0.028)	NA	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.013)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.019	0.019	Waldo, OH	Rural	87	8	background site
	1	1	0.004	0.004	Stockholm	Urban	89	14	
	1	1	0.0033	0.0033	Stockholm	Urban	89	14	
	1	1	0.0014	0.0014	Stockholm	Urban	89	14	
	1	1	0.0003	0.0003	Stockholm	Urban	89	14	
	1	1	0.0001	0.0001	Bloomington, IN	Urban	86	15	
	7	0	ND(0.0062-0.11)	NA	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	0.0920	0.0920	Commerce, CA	Urban	87	10	near freeway
	6	1	ND-0.11	0.0397	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	0	ND(0.030-0.12)	NA	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	0	ND(0.017-0.10)	NA	El Toro, CA	Urban	87-88	10	mostly residential
	4	2	ND-0.14	0.0606	Cal. Transit, CA	Urban	88-89	10	near highway
	2	0	ND(0.024-0.040)	NA	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	0	ND(0.015-0.043)	NA	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	19	ND-0.029	0.0104	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.001-0.006	0.0035	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	13	ND-0.09	0.032	Franklin County, OH	Urban	95	12	
	3	2	ND-0.0188	0.0143	Franklin County, OH	Rural	95	12	
	2	2	0.082-0.18	0.13	Franklin County, OH	Industrial	95	12	near waste to energy facility
	16	NR	NR	0.10	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	ND(0.000091)-0.011	0.0025	Various U.S. Sites	Rural	98-99	17	background
HpCDFs	16	12	ND-0.43	0.13	Niagra Falls, NY	Urban	86-87	1	
	16	12	ND-8.76	1.67	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
HpCDFs (continued)	7	NR	ND-1.0	0.37	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	26	ND-1.58	0.47	Wallingford, CT	Urban	88	5	
	1	1	0.11	0.11	Stockholm, Sweden	Urban	89	13	
	2	2	0.1-1.2	0.65	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	2-5	3.5	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.37-0.39	0.38	Akron, OH	Industrial	87	8	near incinerators
	2	2	0.26-0.64	0.45	Columbus, OH	Industrial	87	8	near incinerators
	1	1	0.15	0.15	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.29	0.29	Waldo, OH	Rural	87	8	background site
	3	1	ND-0.65	0.312	Albany, NY	Urban	87-88	9	
	1	0	ND(0.14)	NA	Binghamton, NY	Urban	88	9	
	2	1	ND(0.41)-0.07	0.138	Utica, NY	Urban	88	9	
	2	2	0.13-0.26	0.195	Niagra Falls, NY	Industrial	87	9	
	1	1	0.11	0.11	Stockholm	Urban	89	14	
	1	1	0.081	0.081	Stockholm	Urban	89	14	
	1	1	0.036	0.036	Stockholm	Urban	89	14	
	1	1	0.015	0.015	Stockholm	Urban	89	14	
	7	5	ND-1.40	0.288	Reseda, CA	Urban	87-89	10	mostly residential
	1	1	1.80	1.80	Commerce, CA	Urban	87	10	near freeway
	6	4	ND-1.20	0.327	North Long Beach, CA	Urban	87-89	10	mostly residential
	5	3	ND-0.66	0.822	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	1	ND-0.13	0.0860	El Toro, CA	Urban	87-88	10	mostly residential
	4	3	ND-2.25	0.724	Cal. Transit, CA	Urban	88-89	10	near highway
	2	1	ND-0.33	0.174	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	1	ND-0.30	0.161	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.022-0.314	0.128	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.020-0.070	0.042	Connecticut	Rural	93-94	11	near resource recovery facilities
	16	NR	NR	1.33	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road

Table B-2. Environmental Levels of Dibenzofurans in Air (pg/m^3) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
Octachlorodibenzofurans (MW=444.76)									
1,2,3,4,6,7,8,9-OCDF	16	11	ND-0.22	0.09	Niagra Falls, NY	Urban	86-87	1	
	15	8	ND-3.38	0.62	Niagra Falls, NY	Industrial	86-87	1	downwind industrial complex
	NR	NR	NR	0.07	Greenbay, WI	Urban	NR	2	
	1	1	0.06	0.06	Los Angeles, CA	Urban	87	3	
	7	NR	ND-0.56	0.21	Bridgeport, CT	Urban	87-88	4	composite of 2-7 samples
	28	18	ND-0.70	0.21	Wallingford, CT	Urban	88	5	
	NR	NR	NR	0.14	Rutland, VT	Urban	NR	6	
	NR	NR	NR	0.03	Durham, NC	Urban	NR	6	
	1	1	0.02	0.02	Stockholm, Sweden	Urban	89	13	
	2	0	ND(0.11-1.0)	NA	Hamburg, Germany	Urban	NR	7	urban air & inside traffic tunnel
	2	2	0.78-7.0	3.89	Hamburg, Germany	Industrial	NR	7	downwind incinerator & industrial complex
	3	3	0.17-0.19	0.18	Akron, OH	Industrial	87	8	near incinerators
	2	1	ND-0.21	0.18	Columbus, OH	Industrial	87	8	near incinerators
	1	0	ND(0.16)	NA	Columbus, OH	Urban	87	8	next to interstate highway
	1	1	0.077	0.077	Waldo, OH	Rural	87	8	background site
	3	1	ND(0.93)-0.3	0.312	Albany, NY	Urban	87-88	9	
	1	0	ND(0.3)	NA	Binghamton, NY	Urban	88	9	
	2	0	ND(0.12-1.10)	NA	Utica, NY	Urban	88	9	
	2	2	0.12-0.18	0.15	Niagra Falls, NY	Industrial	87	9	
	1	1	0.016	0.016	Stockholm	Urban	89	14	
	1	1	0.0072	0.0072	Stockholm	Urban	89	14	
	1	1	0.003	0.003	Stockholm	Urban	89	14	
	1	1	0.0009	0.0009	Stockholm	Urban	89	14	
	6	3	ND-0.13	0.116	Reseda, CA	Urban	87-89	10	mostly residential

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location range	Location description	Sample year	Ref. no.	Comments
1,2,3,4,6,7,8,9-OCDF	5	2	ND-0.43	0.152	North Long Beach, CA	Urban	87-89	10	mostly residential
(continued)	5	3	ND-0.29	0.162	San Bernadino, CA	Urban	87-89	10	mostly residential
	7	4	ND-0.13	0.0756	El Toro, CA	Urban	87-88	10	mostly residential
	4	2	ND-2.17	0.662	Cal. Transit, CA	Urban	88-89	10	near highway
	2	1	ND-0.12	0.164	Carson, CA	Industrial	88-89	10	on site at gas cooking equipment manufacturer
	2	2	0.32-0.43	0.374	West Long Beach, CA	Urban	88-89	10	mostly residential
	20	20	0.009-0.179	0.0551	Connecticut	Urban	93-94	11	near resource recovery facilities
	4	4	0.011-0.028	0.0193	Connecticut	Rural	93-94	11	near resource recovery facilities
	14	14	0.038-0.366	0.14	Franklin County, OH	Urban	95	12	
	3	3	0.0403-0.0899	0.0668	Franklin County, OH	Rural	95	12	
	2	2	0.261-0.56	0.411	Franklin County, OH	Industrial	95	12	near waste-to-energy facility
	16	NR	NR	0.344	Phoenix, AZ	Urban	94	16	close proximity to a heavily traveled road
	53	53	0.0022-0.052	0.017	Various U.S. Sites	Rural	98-99	17	background

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects;
NA = Not available;
NR = Not reported;
ND = Non-detect.

Sources:

1. Smith et al. (1989)
2. Harless et al. (1990)
3. Maisel and Hunt (1990)
4. Hunt and Maisel (1990)
5. CDEP (1988)
6. Harless et al. (1991)
7. Rappe and Kjeller (1987)
8. Edgerton et al. (1989)
9. Smith et al. (1990)
10. Hunt et al. (1990)
11. CDEP (1995)
12. OEPA (1995)
13. Naf et al. (1990)
14. Broman et al. (1991)
15. Eitzer and Hites (1989)
16. Hunt et al. (1997)
17. Cleverly et al. (2000)

Table B-3. Environmental Levels of PCBs in Air (pg/m^3)

IUPAC Number	Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
					Tetrachloro-PCB					
77	3,3'4,4'-TeCB	53	52	0.0051-0.14	0.054	Various U.S. Sites	Rural	98-99	2	
					Pentachloro-PCB					
118	2,3',4,4',5-PeCB	143	143	NR	2.3	Egbert, ON	Rural	88-89	1	
114	2,3,4,4',5-PeCB	143	143	NR	1.2	Egbert, ON	Rural	88-89	1	
105	2,3,3',4,4'-PeCB	143	143	NR	0.16	Egbert, ON	Rural	88-89	1	
118	2,3',4,4',5-PeCB	53	50	0.1-4	0.82	Various U.S. Sites	Rural	98-99	2	
105	2,3,3',4,4'-PeCB	53	50	0.039-1.3	0.3	Various U.S. Sites	Rural	98-99	2	
126	3,3',4,4',5-PeCB	53	52	0.00088-0.04	0.0062	Various U.S. Sites	Rural	98-99	2	
					Hexachloro-PCB					
156	2,3,3',4,4',5-HxCB	143	143	NR	0.07	Egbert, ON	Rural	88-89	1	
156	2,3,3',4,4',5-HxCB	53	50	0.0075-0.24	0.05	Various U.S. Sites	Rural	98-99	2	
157	2,3,3',4,4',5'-HxCB	53	50	0.0016-0.051	0.011	Various U.S. Sites	Rural	98-99	2	
169	3,3',4,4',5,5'-HxCB	53	52	ND(0.00006)-0.0036	0.00068	Various U.S. Sites	Rural	98-99	2	
					Heptachloro-PCB					
189	2,3,3',4,4',5,5'-HpCB	143	143	NR	0.01	Egbert, ON	Rural	88-89	1	

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects;
NA = not available;
NR = not reported;
ND = Non-detect.

Sources:

1. Hoff et al. (1992)
2. Cleverly et al. (2000)

Table B-4. Environmental Levels of Dioxins in Soil (ppt)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
Tetrachlorodibenzo-p-dioxins (MW=321.98)									
2,3,7,8-TCDD	23	23	10-36000	2133	Midland, MI	Industrial	1983	1	
	62	59	ND-270	55	Midland, MI	Residential	1983	1	
	13	1	ND-2	<1	Henry, IL	Residential	1984	1	
	22	6	ND-5	1	Middletown, OH	Residential	1983	1	
	4	0	ND(1.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	2	Finland	Industrial	NR	2	
	33	33	22-52000	4300	Midland, MI	Industrial	NR	3	
	11	9	ND-590	145	Midland, MI	Industrial	NR	3	
	20	13	ND-9.4	2	US	Industrial	NR	3	Urban area
	8	4	ND-3.1	2	Sweden	Urban	1989	4	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	5	Agriculture
	12	12	1-7	3	England	Residential	1990	6	Rural
	19	6	ND-4.2	1	England	Urban	NR	7	
	3	0	ND(0.2-2.0)	NA	Various parts of Europe	Rural	NR	8	
	2	2	2.4-0.84	1.62	Various parts of Europe	Industrial	NR	8	
	65	NR	ND-2.1	<0.5	British Isles	Background	NR	9	
	NR	NR	200000	NR	Muggenburger st. Hamburg,Germany	Industrial	1985	10	Maximum contents reported
	NR	NR	2800	NR	Kirchsteinbek, Hamburg,Germany	Industrial	1985	10	Maximum contents reported
	NR	NR	900	NR	Ochsenwerder Landscheideweg, Hamburg,Germany	Contaminated site	1985	10	Maximum contents reported
	NR	NR	874000	NR	Moorefleeter Brack Hamburg,Germany	Contaminated site	1985	10	Maximum contents reported
	13	0	ND	NA	Salzburg, Austria	Urban	1990/91	11	
	5	0	ND	NA	Salzburg, Austria	Industrial	1990/91	11	
	6	0	ND	NA	Salzburg, Austria	Rural	1990/91	11	
	53	0	ND	NA	British Columbia, Canada	Background	NR	12	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
2,3,7,8-TCDD	31	8	ND-85	5.18	British Columbia, Canada	Near Impacted site	NR	12	
(continued)	47	9	ND-550	15.44	British Columbia, Canada	Impacted site	NR	12	
	14	NR	ND(0.2)	NA	Western Germany	Background	NR	13	Plowland
	7	NR	ND(0.2)	NA	Western Germany	Background	NR	13	Grassland
	9	NR	0.5-3.0	1.4	Western Germany	Background	NR	13	Deciduous forest
	11	NR	ND-4.0	92	Western Germany	Background	NR	13	Coniferous forest
	3	2	ND-0.57	0.393	Ohio	Background	1995	14	
	4	4	4.2-56.99	28.520	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	15	ND-10.91	2.273	Ohio	Urban	1995	14	
	34	15	0.02-7.96	0.61	Connecticut	Urban	1987/90	17	Pre-operational
	8	3	ND-1.1	0.28	Yarmouth, ME	Background	1996	18	
	162	161	0.0011-20	0.61	Denver Front Range	Various Land Uses	99-00	19	background
TCDDs	1	1	320	320	Midland, MI	Industrial	1983	1	
	7	5	ND-290	109	Midland, MI	Residential	1983	1	
	5	0	ND(1.0)	NA	Middletown, OH	Residential	1983	1	
	3	0	ND(1.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	89	Finland	Industrial	NR	2	
	11	NR	ND-7	<1	Canada	Urban	1983	15	Near Incinerator
	12	NR	ND-430	69	Canada	Urban	1987	15	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	15	
	29	NR	ND-1200	69	Canada	Urban	83-88	15	
	8	8	37-217	98	Sweden	Urban	1989	4	Near Stockholm
	4	0	ND	NA	Elk River, MN	Agriculture	1988	5	
	12	12	17-120	42	England	Residential	1990	6	Rural
	19	19	9-160	65	England	Urban	NR	7	
	2	2	11.2-55.5	33.4	Various parts of Europe	Industrial	NR	8	
	1	1	3.2	3.2	Various parts of Europe	Rural	NR	8	
	65	NR	ND-69	9.4	British Isles	Background	NR	10	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
TCDDs (continued)	30	0	ND	NA	Ontario and U.S. Midwestern States	Rural	NR	16	
	20	0	ND	NA	Ontario and U.S. Midwestern States	Industrial	NR	16	
	47	11	ND-430	40.3	Ontario and U.S. Midwestern States.	Urban	NR	16	
	13	2	0-1.6	0.75	Salzburg, Austria	Urban	1990/91	11	
	5	4	ND-9.8	4.8	Salzburg, Austria	Industrial	1990/91	11	
	6	1	ND-1.8	0.3	Salzburg, Austria	Rural	1990/91	11	
	53	19	ND-240	12.48	British Columbia, Canada	Background	NR	12	
	31	11	ND-1100	71.93	British Columbia, Canada	Near Impacted site	NR	12	
	47	19	ND-11000	1009.58	British Columbia, Canada	Impacted site	NR	12	
	14	NR	0.4-3.4	2	Western Germany	Background	NR	13	Plowland
	7	NR	0.9-6.9	2.8	Western Germany	Background	NR	13	Grassland
	9	NR	16.1-235.8	70.5	Western Germany	Background	NR	13	Deciduous forest
	11	NR	19-392.1	92	Western Germany	Background	NR	13	Coniferous forest
	34	28	0.09-33.3	3.63	Connecticut	Urban	1987/90	17	Pre-operational
	8	5	ND-5.17	1.95	Yarmouth, ME	Background	1996	18	
Pentachlorodibenzo-p-dioxins (MW=356.42)									
1,2,3,7,8-PeCDD	NR	NR	NR	15	Finland	Industrial	NR	2	
	8	7	2.6-18.3	10	Sweden	Urban	1989	4	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	5	Agriculture
	19	7	ND-11	2	England	Urban	NR	7	
	3	0	ND(0.1-2)	NA	various parts of Europe	Rural	NR	8	
	2	2	18-34	26	various parts of Europe	Industrial	NR	8	
	65	NR	ND-2.4	<0.5	British Isles	Background	NR	9	
	13	2	1.1-4.6	0.4	Salzburg, Austria	Urban	1990/91	11	
	5	1	ND-1.9	0.4	Salzburg, Austria	Industrial	1990/91	11	
	6	0	ND	NA	Salzburg, Austria	Rural	1990/91	11	
	53	3	ND-4.4	0.16	British Columbia, Canada	Background	NR	12	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,7,8-PeCDD	31	5	ND-670	45.94	British Columbia, Canada	Near Impacted site	NR	12	
(continued)	47	17	ND-410	40.28	British Columbia, Canada	Impacted site	NR	12	
	14	NR	ND(0.4)	NA	Western Germany	Background	NR	13	Plowland
	7	NR	0.4-0.4	0.4	Western Germany	Background	NR	13	Grassland
	9	NR	1.1-29.1	8.3	Western Germany	Background	NR	13	Deciduous forest
	11	NR	ND-8.9	5.1	Western Germany	Background	NR	13	Coniferous forest
	3	0	ND	NA	Ohio	Background	1995	14	
	4	4	21.52-393.18	180.008	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	18	3.2-24.62	6.584	Ohio	Urban	1995	14	
	34	34	0.04-15.0	1.74	Connecticut	Urban	1987/90	17	Pre-operational
	8	4	ND-0.98	0.43	Yarmouth, ME	Background	1996	18	
	162	160	0.0017-54	1.4	Denver Front Range	Various Land Uses	99-00	19	background
PeCDDs	1	1	240	240	Midland, MI	Industrial	1983	1	
	7	2	ND-120	31	Midland, MI	Residential	1983	1	
	5	0	ND(10)	NA	Middletown, OH	Residential	1983	1	
	3	0	ND(4.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	900	Finland	Industrial	NR	2	
	11	NR	ND-580	53	Canada	Urban	1983	15	Near Incinerator
	12	NR	ND-540	81	Canada	Urban	1987	15	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	15	
	29	NR	ND-130	12.8	Canada	Urban	83-88	15	
	8	8	46-476	159	Sweden	Urban	1989	4	Near Stockholm
	4	1	ND-38	10	Elk River, MN	Rural	1988	5	Agriculture
	12	12	4-50	20	England	Residential	1990	6	Rural
	19	19	6-190	69	England	Urban	NR	7	
	1	1	4.6	4.6	various parts of Europe	Rural	NR	8	
	2	2	220-270	245	various parts of Europe	Industrial	NR	8	
	65	NR	ND-46	6.6	British Isles	Background	NR	9	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
PeCDDs (continued)	47	7	ND-580	38.4	Ontario and U.S. Midwestern States	Urban	NR	16	
	30	0	ND	NA	Ontario and U.S. Midwestern States	Rural	NR	16	
	20	0	ND	NA	Ontario and U.S. Midwestern States	Industrial	NR	16	
	13	7	0.8-36.3	4.2	Salzburg, Austria	Urban	1990/91	11	
	5	4	ND-15.6	7.3	Salzburg, Austria	Industrial	1990/91	11	
	6	5	ND-4.9	0.8	Salzburg, Austria	Rural	1990/91	11	
	53	16	ND-190	8.96	British Columbia, Canada	Background	NR	12	
	31	8	ND-4700	358.61	British Columbia, Canada	Near Impacted site	NR	12	
	47	25	ND-9100	1049.05	British Columbia, Canada	Impacted site	NR	12	
	14	NR	1.2-5.3	2.3	Western Germany	Background	NR	13	Plowland
	7	NR	0.9-23.8	6.1	Western Germany	Background	NR	13	Grassland
	9	NR	19.5-285.2	98.1	Western Germany	Background	NR	13	Deciduous forest
	11	NR	32.6-192.4	91.1	Western Germany	Background	NR	13	Coniferous forest
	35	31	0.16-108	11.73	Connecticut	Urban	1987/90	17	Pre-operational
	8	6	ND-5.7	3.0	Yarmouth, ME	Background	1996	18	
Hexachlorodibenzo-p-dioxins (MW=390.87)									
1,2,3,4,7,8-HxCDD	NR	NR	NR	<2	Finland	Industrial	NR	2	
	8	8	4.3-8.0	6	Sweden	Urban	1989	4	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	5	Agriculture
	3	0	ND(0.1-2)	NA	various parts of Europe	Rural	NR	8	
	2	2	13-28	21	various parts of Europe	Industrial	NR	8	
	13	8	ND-3.2	0.8	Salzburg, Austria	Urban	1990/91	11	
	5	1	ND-0.8	0.2	Salzurg, Austria	Industrial	1990/91	11	
	6	2	0.7-1.1	0.3	Salzburg, Austria	Rural	1990/91	11	
	53	3	ND-6.7	0.2	British Columbia, Canada	Background	NR	12	
	31	8	ND-420	37.14	British Columbia, Canada	Near Impacted site	NR	12	
	47	17	ND-490	56.99	British Columbia, Canada	Impacted site	NR	12	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8-HxCDD (continued)	14	NR	0.8-1.4	1.2	Western Germany	Background	NR	13	Plowland
	7	NR	ND(0.8)	NA	Western Germany	Background	NR	13	Grassland
	9	NR	1.5-20.9	6.5	Western Germany	Background	NR	13	Deciduous forest
	11	NR	2.1-14.0	5.8	Western Germany	Background	NR	13	Coniferous forest
	3	1	ND-0.74	0.350	Ohio	Background	1995	14	
	4	4	20.61-297.59	142.287	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	18	2.2-21.94	6.144	Ohio	Urban	1995	14	
	35	35	0.08-8.49	1.29	Connecticut	Urban	1987/90	17	Pre-operational
	8	7	ND-2.6	1.22	Yarmouth, ME	Background	1996	18	
	162	161	0.0049-65	2.5	Denver Front Range	Various Land Uses	99-00	19	background
1,2,3,6,7,8-HxCDD	NR	NR	NR	2100	Finland	Industrial	NR	2	
	8	8	3.3-32.2	12	Sweden	Urban	1989	4	Near Stockholm
	4	1	ND-14	4	Elk River, MN	Rural	1988	5	Agriculture
	3	0	ND(0.1-2)	NA	various parts of Europe	Rural	NR	8	
	2	2	19-64	42	various parts of Europe	Industrial	NR	8	
	13	9	ND-5.6	1.7	Salzburg, Austria	Urban	1990/91	11	
	5	2	ND-2.3	1.2	Salzburg, Austria	Industrial	1990/91	11	
	6	2	1.1-1.9	0.5	Salzburg, Austria	Rural	1990/91	11	
	53	28	ND-185	13.13	British Columbia, Canada	Background	NR	12	
	31	16	ND-10000	777.70	British Columbia, Canada	Near Impacted site	NR	12	
	47	34	ND-8600	680.58	British Columbia, Canada	Impacted site	NR	12	
	14	NR	1.1-1.8	1.5	Western Germany	Background	NR	13	Plowland
	7	NR	1.4-2.9	1.9	Western Germany	Background	NR	13	Grassland
	9	NR	3.1-49.4	12.4	Western Germany	Background	NR	13	Deciduous forest
	11	NR	3.7-28.8	11.1	Western Germany	Background	NR	13	Coniferous forest
	3	3	0.52-1.39	0.817	Ohio	Background	1995	14	
	4	4	18.15-295.49	137.798	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	18	1.2-40.17	10.940	Ohio	Urban	1995	14	
	35	34	0.25-17.3	2.66	Connecticut	Urban	1987/90	17	Pre-operational

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	8	8	1.3-5.8	2.89	Yarmouth, ME	Background	1996	18	
1,2,3,6,7,8-HxCDD	162	161	0.0044-200	6.5	Denver Front Range	Various Land Uses	99-00	19	background
(continued)	NR	NR	NR	700	Finland	Industrial	NR	2	
1,2,3,7,8,9-HxCDD	8	7	ND-16.6	8	Sweden	Urban	1989	4	Near Stockholm
	4	2	ND-9.9	5	Elk River, MN	Rural	1988	5	Agriculture
	3	0	ND(0.1-2)	NA	various parts of Europe	Rural	NR	8	
	2	2	6.2-19	13	various parts of Europe	Industrial	NR	8	
	13	7	ND-4.6	1.1	Salzburg, Austria	Urban	1990/91	11	
	5	2	1.6-2.5	1.1	Salzburg, Austria	Industrial	1990/91	11	
	6	1	ND-2.1	0.4	Salzburg, Austria	Rural	1990/91	11	
	53	16	ND-55.5	3.42	British Columbia, Canada	Background	NR	12	
	31	13	ND-1200	99.24	British Columbia, Canada	Near Impacted site	NR	12	
	47	28	ND-2700	228.74	British Columbia, Canada	Impacted site	NR	12	
	14	NR	1.6-2.4	2.0	Western Germany	Background	NR	13	Plowland
	7	NR	1.7-1.7	1.7	Western Germany	Background	NR	13	Grassland
	9	NR	3.6-82.0	19.1	Western Germany	Background	NR	13	Deciduous forest
	11	NR	5.3-54.3	16.2	Western Germany	Background	NR	13	Coniferous forest
	3	3	0.75-2.11	1.23	Ohio	Background	1995	14	
	4	4	96.1-422.85	201.608	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	18	1.47-36.59	10.839	Ohio	Urban	1995	14	
	35	34	0.28-15.70	2.75	Connecticut	Urban	1987/90	17	Pre-operational
	8	8	0.97-3.10	2.41	Yarmouth, ME	Background	1996	18	
	162	161	0.0047-120	4	Denver Front Range	Various Land Uses	99-00	19	background
HxCDDs	1	1	4000	4000	Midland, MI	Industrial	1983	1	
	8	6	ND-410	151	Midland, MI	Residential	1983	1	
	5	1	ND-72	14	Middletown, OH	Residential	1983	1	
	3	0	ND(5.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	7200	Finland	Industrial	NR	2	
	11	NA	ND-170	15	Canada	Urban	1983	15	Near Incinerator

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	12	NA	ND-70	9	Canada	Urban	1987	15	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	15	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
HxCDDs (continued)	29	0	ND	NA	Canada	Urban	83-88	15	
	8	8	43-349	156	Sweden	Urban	1989	4	Near Stockholm
	4	4	12-99	48	Elk River, MN	Rural	1988	5	Agriculture
	12	12	8-43	23	England	Residential	1990	6	Rural
	19	19	23-340	154	England	Urban	NR	7	
	1	1	4.7	4.7	Various parts of Europe	Rural	NR	8	
	2	2	200-330	265	Various parts of Europe	Industrial	NR	8	
	65	NR	2.8-165	38	British Isles	Background	NR	9	
	47	13	ND-410	38.12	Ontario and U.S. Midwestern States	Urban	NR	16	
	30	0	ND	NA	Ontario and U.S. Midwestern States	Rural	NR	16	
	20	8	ND-240	44.1	Canada and U.S.A.	Industrial	NR	16	
	13	13	4.8-53	18.8	Salzburg, Austria	Urban	1990/91	11	
	5	5	20.3-48.0	30.3	Salzburg, Austria	Industrial	1990/91	11	
	6	5	ND-44.3	12.0	Salzburg, Austria	Rural	1990/91	11	
	53	37	ND-1250	82.46	British Columbia, Canada	Background	NR	12	
	31	18	ND-29000	2794.7	British Columbia, Canada	Near Impacted site	NR	12	
	47	39	ND-36000	3393.51	British Columbia, Canada	Impacted site	NR	12	
	14	NR	2-13.1	7.0	Western Germany	Background	NR	13	Plowland
	7	NR	3.9-26.0	14.9	Western Germany	Background	NR	13	Grassland
	9	NR	39.9-901.0	202.0	Western Germany	Background	NR	13	Deciduous forest
	11	NR	55.7-397.0	156.2	Western Germany	Background	NR	13	Coniferous forest
	35	34	0.29-170.0	28.7	Connecticut	Urban	1987/90	17	Pre-operational
	7	7	9.4-30	19.6	Yarmouth, ME	Background	1996	18	
Heptachlorodibenzo-p-dioxins (MW=425.31)									
1,2,3,4,6,7,8-HpCDD	NR	NR	NR	4700	Finland	Industrial	NR	2	
	8	8	43-492	144	Sweden	Urban	1989	4	Near Stockholm
	4	4	37-360	194	Elk River, MN	Rural	1988	5	Agriculture
	13	13	5.9-121.8	30.3	Salzburg, Austria	Urban	1990/91	11	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,6,7,8-HpCDD (continued)	5	5	13.6-92.0	30.6	Salzburg, Austria	Industrial	1990/91	11	
	6	6	1.8-24.6	8.1	Salzburg, Austria	Rural	1990/91	11	
	53	43	ND-2100	141.3	British Columbia, Canada	Background	NR	12	
	31	22	ND-37000	3589.22	British Columbia, Canada	Near Impacted site	NR	12	
	47	42	ND-530000	16877.14	British Columbia, Canada	Impacted site	NR	12	
	14	NR	4.1-21.9	9.1	Western Germany	Background	NR	13	Plowland
	7	NR	7.1-34.8	14.6	Western Germany	Background	NR	13	Grassland
	9	NR	22.8-398.7	120.7	Western Germany	Background	NR	13	Deciduous forest
	11	NR	35.9-271.7	109.0	Western Germany	Background	NR	13	Coniferous forest
	3	3	9.4-31.6	17.773	Ohio	Background	1995	14	
	4	4	139.24-1508.86	765.160	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	18	11.69-902.55	190.081	Ohio	Urban	1995	14	
	35	35	2.34-270	55.3	Connecticut	Urban	1987/90	17	Pre-operational
	8	8	12.9-160	68.1	Yarmouth, ME	Background	1996	18	
	160	161	0.36-3,700	170	Denver Front Range	Various Land Uses	99-00	19	background
1,2,3,4,6,7,9-HpCDD	NR	NR	NR	7100	Finland	Industrial	NR	2	
HpCDDs	1	1	75000	75000	Midland, MI	Industrial	1983	1	
	8	88	150-2400	813	Midland, MI	Residential	1983	1	
	5	5	23-200	113	Middletown, OH	Residential	1983	1	
	3	3	25-91	54	MN	Pristine	1983	1	
	11	NR	ND-390	90	Canada	Urban	1983	15	Near Incinerator
	12	NR	ND-300	43	Canada	Urban	1987	15	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	15	
	29	NR	ND-1100	93	Canada	Urban	83-88	15	
	8	8	83-904	277	Sweden	Urban	1989	4	Near Stockholm
	4	4	62-640	346	Elk River, MN	Rural	1988	5	Agriculture
	12	12	20-130	64	England	Residential	1990	6	Rural
	19	19	77-5500	817	England	Urban	NR	7	
	3	1	ND-17	9.0	Various parts of Europe	Rural	NR	8	

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
HpCDDs (continued)	2	2	370-1600	985	Various parts of Europe	Industrial	NR	8	
	65	NR	7.5-234	66	British Isles	Background	NR	9	
	30	3	ND-91	5.4	Ontario and U.S. Midwestern States.	Rural	NR	16	
	47	25	ND-2400	212	Ontario and U.S. Midwestern States.	Urban	NR	16	
	20	19	ND-5000	1197	Canada and U.S.A.	Industrial	NR	16	
	13	13	10.3-197.1	51.1	Salzburg, Austria	Urban	1990/91	11	
	5	5	24.0-166.0	57.3	Salzburg, Austria	Industrial	1990/91	11	
	6	6	3.5-45.3	15.0	Salzburg, Austria	Rural	1990/91	11	
	53	43	ND-3350	233.29	British Columbia, Canada	Background	NR	12	
	31	22	ND-5200	5460.29	British Columbia, Canada	Near Impacted site	NR	12	
	47	42	ND-760000	25253.48	British Columbia, Canada	Impacted site	NR	12	
	14	NR	3.2-26.3	14.2	Western Germany	Background	NR	13	Plowland
	7	NR	11.1-62.9	25.7	Western Germany	Background	NR	13	Grassland
	9	NR	45.0-1151.6	275.3	Western Germany	Background	NR	13	Deciduous forest
	11	NR	74.2-522.7	219.9	Western Germany	Background	NR	13	Coniferous forest
	35	35	4.59-568	121	Connecticut	Urban	1987/90	17	Pre-operational
	8	8	19.5-240	118	Yarmouth, ME	Background	1996	18	
Octachlorodibenzo-p-dioxin (MW=460.76)									
1,2,3,4,6,7,8,9-OCDD	1	1	375000	375000	Midland, MI	Industrial	1983	1	
	8	8	330-12000	3914	Midland, MI	Residential	1983	1	
	5	5	170-10600	2418	Middletown, OH	Residential	1983	1	
	3	3	92-200	140	MN	Pristine	1983	1	
	NR	NR	NR	6200	Finland	Industrial	NR	2	
	11	NR	ND-3500	663	Canada	Urban	1983	15	Near Incinerator
	12	NR	ND-1500	570	Canada	Urban	1987	15	Near Incinerator
	43	NR	ND-100	38	Canada	Rural	83-88	15	
	29	NR	ND-16000	2464	Canada	Urban	83-88	15	
	8	8	113-2659	687	Sweden	Urban	1989	4	Near Stockholm

Table B-4. Environmental Levels of Dioxins in Soils (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,6,7,8,9-OCDD	4	4	340-3300	1655	Elk River, MN	Rural	1988	5	Agriculture
(continued)	12	12	20-150	58	England	Residential	1990	6	
	19	19	176-99000	9980	England	Urban	NR	7	
	1	1	14	14	Various parts of Europe	Rural	NR	8	
	2	2	140-160	160	Various parts of Europe	Industrial	NR	8	
	65	NR	29-832	191	British Isles	Background	NR	9	
	30	17	44-810	67.33	Ontario and U.S. Midwestern States.	Rural	NR	16	
	47	38	ND-12000	1599	Ontario and U.S. Midwestern States.	Urban	NR	16	
	20	20	15-26000	3442	Canada and U.S.A.	Industrial	NR	16	
	3	3	75.76-298.32	160.893	Ohio	Background	1995	14	
	4	4	653.25-1973.490	1495.390	Ohio	Impacted site	1995	14	Near waste-to-energy facility
	18	18	76.61-6995.43	1560.161	Ohio	Urban	1995	14	
	35	35	20.4-4,970	814.3	Connecticut	Urban	1987/90	17	Pre-operational
	8	8	145-4,000	967	Yarmouth, ME	Background	1996	18	
	162	161	0.14-18,000	900	Denver Front Range	Various Land Uses	99-00	19	background

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects if congener-specific detection limits were given; when detection limits were not given, zero was used for nondetects.
NA = Not applicable.
ND = Non-detect.
NR = Not reported.
Detection limits varied by study and as was different for different compounds, but generally were 1 to 5 ng/kg (ppt). Descriptions provided were those given by reference or surmised from study description when not given.

Sources:

1. U.S. EPA (1985)
2. Kitunen and Salkinoja-Salonen (1990)
3. Nestrick et al. (1986)
4. Broman et al. (1990)
5. Reed et al. (1990)
6. Stenhouse and Badsha (1990)
7. Creaser et al. (1990)
8. Rappe and Kjeller (1987)
9. Creaser et al. (1989)
10. Sievers and Friesel (1989)
11. Boos et al. (1992)
12. BC Environment (1995)
13. Rotard et al. (1994)
14. U.S. EPA (1996)
15. Pearson et al. (1990)
16. Birmingham (1990)
17. MRI (1992)
18. Tewhey Associates (1997)
19. U.S. EPA Region 8 (2000)

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
Tetrachlorodibenzofurans (MW=305.98)									
2,3,7,8-TCDF	2	2	27-450	238	Midland, MI	Industrial	1983	1	
	8	3	ND-15	5	Midland, MI	Residential	1983	1	
	5	2	ND-6	2	Middletown, OH	Residential	1983	1	
	3	0	ND(1.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	<2	Finland	Industrial	NR	2	
	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
	12	12	3-50	17	England	Residential	1990	4	Rural
	13	7	ND-6.1	1.4	Salzurg, Austria	Urban	1990/91	5	
	5	3	ND-12.0	4.1	Salzburg, Austria	Industrial	1990/91	5	
	6	1	ND-1.9	0.3	Salzburg, Austria	Rural	1990/91	5	
	53	28	ND-32	3.21	British Columbia, Canada	Background	1995	6	
	31	16	ND-520	47.86	British Columbia, Canada	Near Impacted site	1995	6	
	47	23	ND-550	60.68	British Columbia, Canada	Impacted site	1995	6	
	14	NR	0.7-3.4	1.8	West Germany	Background	NR	7	Plowland
	7	NR	0.7-3.6	2.2	West Germany	Background	NR	7	Grassland
	9	NR	7.2-67.8	25.4	West Germany	Background	NR	7	Deciduous forest
	11	NR	10.0-60.6	27.9	West Germany	Background	NR	7	Coniferous forest
	3	0	ND	NA	Ohio	Background	1995	8	
	4	4	11.4-184.66	85.892	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	18	0.67-16.19	4.118	Ohio	Urban	1995	8	
	34	33	0.08-15.1	2.29	Connecticut	Urban	1987/90	15	Pre-operational
	8	4	ND-1.2	0.38	Yarmouth, ME	Background	1996	16	
	162	161	0.00067-8.4	0.38	Denver Front Range	Various Land Uses	99-00	17	background
2,3,4,8/2,3,7,8-TCDF	8	8	8.4-57.5	22	Sweden	Urban	1989	9	Near Stockholm
TCDFs	1	0	ND(2.0)	NA	Midland, MI	Residential	1983	1	
	1	0	ND(1.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	300	Finland	Industrial	NR	2	
	11	NR	ND-71	10	Canada	Urban	1983	10	Near Incinerator
	12	0	ND	NA	Canada	Urban	1987	10	Near Incinerator

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
TCDFs (continued)	43	1	ND-280	6.5	Canada	Rural	83-88	10	
	29	NR	ND-120	15	Canada	Urban	83-88	10	
	8	8	109-454	237	Sweden	Urban	1989	9	Near Stockholm
	4	1	ND-1.2	<1	Elk River, MN	Rural	1988	3	Agriculture
	12	12	20-300	102	England	Residential	1990	4	Rural
	19	19	29-950	232	England	Urban	NR	11	
	3	3	7.7-11	9.3	Various parts of Europe	Rural	NR	12	
	2	2	320-370	345	Various parts of Europe	Industrial	NR	12	
	65	NR	ND-237	25	British Isles	Background	NR	13	
	30	0	ND	NA	Ontario and U.S. Midwestern states	Rural	NR	14	
	47	13	ND-120	11.87	Ontario and U.S. Midwestern states	Urban	NR	14	
	20	3	ND-1850	152.5	Ontario and U.S. Midwestern states	Industrial	NR	14	
	13	8	ND-44.3	13.9	Salzburg, Austria	Urban	1990/91	5	
	5	4	ND-59.4	36.9	Salzburg, Austria	Industrial	1990/91	5	
	6	3	ND-36.7	9.0	Salzburg, Austria	Rural	1990/91	5	
	53	32	ND-260	17.13	British Columbia, Canada	Background	1995	6	
	31	17	ND-9300	538.93	British Columbia, Canada	Near Impacted site	1995	6	
	47	34	ND-3200	374.58	British Columbia, Canada	Impacted site	1995	6	
	14	NR	4.6-28.8	15.7	West Germany	Background	NR	7	Plowland
	7	NR	1.9-34.8	15.7	West Germany	Background	NR	7	Grassland
	9	NR	90.7-959.5	338.2	West Germany	Background	NR	7	Deciduous forest
	11	NR	134.4-1602.2	431.4	West Germany	Background	NR	7	Coniferous forest
	34	32	0.12-202	23.36	Connecticut	Urban	1987/90	15	Pre-operational
	8	6	ND-15	5.4	Yarmouth, ME	Background	1996	16	
Pentachlorodibenzofurans (MW=340.42)									
1,2,3,7,8-PeCDF	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
	12	12	1-10	3	England	Residential	1990	4	Rural

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,7,8-PeCDF (continued)	53	3	ND-7.10	0.31	British Columbia, Canada	Background	1995	6	
	31	9	ND-140	15.67	British Columbia, Canada	Near Impacted site	1995	6	
	47	9	ND-160	17.66	British Columbia, Canada	Impacted site	1995	6	
	3	0	ND	NA	Ohio	Background	1995	8	
	4	4	20.11-298.89	139.577	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	17	ND-18.51	5.504	Ohio	Urban	1995	8	
	34	34	0.04-15.0	1.74	Connecticut	Urban	1987/90	15	Pre-operational
	8	4	ND-0.75	0.26	Yarmouth, ME	Background	1996	16	
	162	161	0.0032-30	0.82	Denver Front Range	Various Land Uses	99-00	17	background
2,3,4,7,8-PeCDF	NR	NR	NR	580	Finland	Industrial	NR	2	
	8	8	3.1-26.5	11	Sweden	Urban	1989	9	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
	12	12	1-5	2	England	Residential	1990	4	Rural
	3	3	0.6-1	0.8	various parts of Europe	Rural	NR	12	
	2	2	23-65	44	various parts of Europe	Industrial	NR	12	
	13	11	ND-3.5	1.6	Salzburg, Austria	Urban	1990/91	5	
	5	5	2.8-11.1	5.0	Salzburg, Austria	Industrial	1990/91	5	
	6	5	ND-2.0	0.7	Salzburg, Austria	Rural	1990/91	5	
	53	1	ND-9.3	0.18	British Columbia, Canada	Background	1995	6	
	31	9	ND-270	27.44	British Columbia, Canada	Near Impacted site	1995	6	
	47	16	ND-210	23.33	British Columbia, Canada	Impacted site	1995	6	
	14	NR	0.7-3.1	1.7	West Germany	Background	NR	7	Plowland
	7	NR	1.2-5.3	2.6	West Germany	Background	NR	7	Grassland
	9	NR	5.6-85.9	30.2	West Germany	Background	NR	7	Deciduous forest
	11	NR	8.1-96.6	32.1	West Germany	Background	NR	7	Coniferous forest
	3	1	ND-0.17	0.210	Ohio	Background	1995	8	
	4	4	26.55-434.37	199.942	Ohio	Impacted Site	1995	8	Near waste-to-energy facility
	18	17	ND-26.61	7.562	Ohio	Urban	1995	8	
	34	33	0.11-17.0	2.36	Connecticut	Urban	87-90	15	Pre-operational

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	8	4	ND-1.2	0.51	Yarmouth, ME	Impacted site	1996	16	Near pole yard facility
2,3,4,7,8-PeCDF (continued)	162	161	ND(0.0026)-64	1.7	Denver Front Range	Various Land Uses	99-00	17	background
1,2,3,7,8/1,2,3,4,8-PeCDF	NR	NR	NR	82	Finland	Industrial	NR	2	
	8	8	7.4-32.1	16	Sweden	Urban	1989	9	Near Stockholm
	13	13	1.5-6.7	3.2	Salzburg, Austria	Urban	1990/91	5	
	5	5	2.3-13.4	31.0	Salzburg, Austria	Industrial	1990/91	5	
	6	5	ND-4.9	2.3	Salzburg, Austria	Rural	1990/91	5	
	14	NR	0.5-3.4	1.8	West Germany	Background	NR	7	Plowland
	7	NR	0.9-5.0	2.7	West Germany	Background	NR	7	Grassland
	9	NR	5.9-93.0	36.2	West Germany	Background	NR	7	Deciduous forest
	11	NR	10.5-107.8	36.2	West Germany	Background	NR	7	Coniferous forest
PeCDFs	1	1	900	900	Midland, MI	Industrial	1983	1	
	8	2	ND-110	19	Midland, MI	Residential	1983	1	
	5	0	ND(8)	NA	Middletown, OH	Residential	1983	1	
	3	0	ND(9)	NA	MN	Pristine	1983	1	
	NR	NR	NR	27000	Finland	Industrial	NR	2	
	11	0	ND	NA	Canada	Urban	1983	10	Near Incinerator
	12	0	ND	NA	Canada	Urban	1987	10	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	10	
	29	NR	ND-160	35	Canada	Urban	83-88	10	
	8	8	36-457	182	Sweden	Urban	1989	9	Near Stockholm
	4	3	18-45	26	Elk River, MN	Rural	1988	3	Agriculture
	12	12	6-70	31	England	Residential	1990	4	Rural
	19	19	19-830	189	England	Urban	NR	11	
	2	2	200-450	325	Various parts of Europe	Industrial	NR	12	
	3	3	6.7-14	11.2	Various parts of Europe	Rural	NR	12	
	65	NR	ND-185	23	British Isles	Background	NR	13	
	47	4	ND-110	3.5	Ontario and U.S. Midwestern states	Urban	NR	14	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	20	5	ND-285	21.5	Ontario and U.S. Midwestern states	Industrial	NR	14	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
PeCDFs (continued)	30	0	ND	NA	Ontario and U.S. Midwestern states	Rural	NR	14	
	13	13	3.0-67.0	23.8	Salzburg, Austria	Urban	1990/91	5	
	5	5	22.0-64.1	46.6	Salzburg, Austria	Industrial	1990/91	5	
	6	5	ND-20.5	9.9	Salzburg, Austria	Rural	1990/91	5	
	53	27	ND-635	22.93	British Columbia, Canada	Background	1995	6	
	31	17	ND-23000	1991.63	British Columbia, Canada	Near Impacted site	1995	6	
	47	30	ND-8000	767.86	British Columbia, Canada	Impacted site	1995	6	
	14	NR	1.4-29.5	11.6	West Germany	Background	NR	7	Plowland
	7	NR	4.6-38.1	18.4	West Germany	Background	NR	7	Grassland
	9	NR	74.0-973.7	362.8	West Germany	Background	NR	7	Deciduous Forest
	11	NR	91.8-1167.8	400.1	West Germany	Background	NR	7	Coniferous Forest
	34	34	0.59-343.0	42.97	Connecticut	Urban	1987/90	15	Pre-operational
	8	7	ND-16	8.81	Yarmouth, ME	Background	1996	16	
Hexachlorodibenzofurans (MW=374.87)									
1,2,3,4,7,8/1,2,3,4,7,9-HxCDF	NR	NR	NR	920	Finland	Industrial	NR	2	
	8	8	6.5-29.1	16	Sweden	Urban	1989	9	Near Stockholm
	13	13	1.0-11.3	4.4	Salzburg, Austria	Urban	1990/91	5	
	5	5	3.2-14.0	7.2	Salzburg, Austria	Industrial	1990/91	5	
	6	4	ND-5.1	2.1	Salzburg, Austria	Rural	1990/91	5	
	14	NR	0.9-3.3	1.7	West Germany	Background	NR	7	Plowland
1,2,3,4,7,8/1,2,3,4,7,9-HxCDF	7	NR	1.0-4.8	2.6	West Germany	Background	NR	7	Grassland
	9	NR	3.7-129.0	35.1	West Germany	Background	NR	7	Deciduous Forest
	11	NR	5.4-88.6	24.5	West Germany	Background	NR	7	Coniferous Forest
1,2,3,4,7,8-HxCDF	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
	53	6	ND-16	1.09	British Columbia, Canada	Background	1995	6	
	31	9	ND-900	99.55	British Columbia, Canada	Near Impacted site	1995	6	
	47	23	ND-2800	141.22	British Columbia, Canada	Impacted site	1995	6	
	3	1	ND-0.23	0.187	Ohio	Background	1995	8	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8-HxCDF (continued)	4	4	37-420	196.750	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	15	ND-34	8.059	Ohio	Urban	1995	8	
	34	35	0.21-49.0	4.84	Connecticut	Urban	1987/90	15	Pre-operational
	8	5	ND-1.6	0.75	Yarmouth, ME	Background	1996	16	
	162	161	0.0079-77	2.3	Denver Front Range	Various Land Uses	99-00	17	background
1,2,3,6,7,8-HxCDF	NR	NR	NR	<2	Finland	Industrial	NR	2	
	8	8	7.7-28.9	14	Sweden	Urban	1989	9	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
	13	13	0.6-6.2	2.7	Salzburg, Austria	Urban	1990/91	5	
	5	5	2.5-6.9	4.3	Salzburg, Austria	Industrial	1990/91	5	
	6	4	ND-3.2	1.2	Salzburg, Austria	Rural	1990/91	5	
	53	4	ND-15	0.62	British Columbia, Canada	Background	1995	6	
	31	9	ND-1400	144.73	British Columbia, Canada	Near Impacted site	1995	6	
	47	20	ND-1100	89.42	British Columbia, Canada	Impacted site	1995	6	
	14	NR	0.7-2.4	1.4	West Germany	Background	NR	7	Plowland
	7	NR	0.7-3.7	1.9	West Germany	Background	NR	7	Grassland
	9	NR	3.3-83.4	26.0	West Germany	Background	NR	7	Deciduous Forest
	11	NR	5.4-77.4	21.2	West Germany	Background	NR	7	Coniferous Forest
	3	3	0.47-0.55	0.523	Ohio	Background	1995	8	
	4	4	31.68-437.19	209.110	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	17	ND-28.13	8.120	Ohio	Urban	1995	8	
	35	35	0.20-17.8	2.32	Connecticut	Urban	1987/90	15	Pre-operational
	8	5	ND-1.1	0.60	Yarmouth, ME	Background	1996	16	
	162	161	0.037-48	1.5	Denver Front Range	Various Land Uses	99-00	17	background
1,2,3,7,8,9-HxCDF	NR	NR	NR	<2	Finland	Industrial	NR	2	
	8	4	ND-3.8	1	Sweden	Urban	1989	9	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
	13	0	ND	NA	Salzburg, Austria	Urban	1990/91	5	
	5	1	ND-4.2	0.2	Salzburg, Austria	Industrial	1990/91	5	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	6	1	ND-2.8	0.5	Salzurg, Austria	Rural	1990/91	5	
1,2,3,7,8,9-HxCDF (continued)	53	3	ND-13	0.36	British Columbia, Canada	Background	1995	6	
	31	5	ND-40	3.35	British Columbia, Canada	Near Impacted site	1995	6	
	47	7	ND-300	12.11	British Columbia, Canada	Impacted site	1995	6	
	14	NR	0.5-0.9	0.7	West Germany	Background	NR	7	Plowland
	7	NR	0.7-1.8	1.1	West Germany	Background	NR	7	Grassland
	9	NR	1.0-27.1	7.6	West Germany	Background	NR	7	Deciduous Forest
	11	NR	ND-16.3	4.4	West Germany	Background	NR	7	Coniferous Forest
	3	0	ND	NA	Ohio	Background	1995	8	
	4	4	1.79-24.16	11.550	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	6	ND-1.98	0.506	Ohio	Urban	1995	8	
	35	18	0.04-4.02	0.56	Connecticut	Urban	1987/90	15	Pre-operational
	8	1	ND-0.55	0.07	Yarmouth, ME	Background	1996	16	
	162	161	0.075-30	0.92	Denver Front Range	Various Land Uses	99-00	17	background
2,3,4,6,7,8-HxCDF	NR	NR	NR	<2	Finland	Industrial	NR	2	
	8	7	ND-21.5	8	Sweden	Urban	1989	9	
	4	1	ND-7.1	2	Elk River, MN	Rural	1988	3	Agriculture
	30	0	ND	NA	Ontario and U.S. Midwestern states	Rural	NR	14	
	13	11	ND-9.6	3.0	Salzburg, Austria	Urban	1990/91	5	
	5	3	ND-5.5	2.7	Salzburg, Austria	Industrial	1990/91	5	
	6	4	ND-4.1	1.2	Salzburg, Austria	Rural	1990/91	5	
	53	1	ND-9	0.17	British Columbia, Canada	Background	1995	6	
	31	7	ND-1400	111.82	British Columbia, Canada	Near Impacted site	1995	6	
	47	14	ND-520	35.7	British Columbia, Canada	Impacted site	1995	6	
	14	NR	0.7-2.8	1.3	West Germany	Background	NR	7	Plowland
	7	NR	1.0-3.7	2.2	West Germany	Background	NR	7	Grassland
	9	NR	2.1-53.8	18.5	West Germany	Background	NR	7	Deciduous Forest
	11	NR	4.1-62.5	17.2	West Germany	Background	NR	7	Coniferous Forest
	3	3	0.47-0.89	0.637	Ohio	Background	1995	8	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	4	4	26.13-327.62	156.660	Ohio	Impacted site	1995	8	Near waste-to-energy facility
2,3,4,6,7,8-HxCDF (continued)	18	18	1.21-20.79	6.990	Ohio	Urban	1995	8	
	35	35	0.21-18.70	2.54	Connecticut	Urban	1987/90	15	Pre-operational
	8	7	ND-2.0	1.43	Yarmouth, ME	Background	1996	16	
	162	161	0.0086-87	2.6	Denver Front Range	Various Land Uses	99-00	17	background
HxCDFs	1	1	3100	3100	Midland, MI	Industrial	1983	1	
	8	3	ND-260	62	Midland, MI	Residential	1983	1	
	5	0	ND(8.0)	NA	Middletown, OH	Residential	1983	1	
	3	0	ND(9.0)	NA	MN	Pristine	1983	1	
	NR	NR	NR	110000	Finland	Industrial	NR	2	
	11	0	ND	NA	Canada	Urban	1983	10	Near Incinerator
	12	0	ND	NA	Canada	Urban	1987	10	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	10	
	29	NR	ND-120	9	Canada	Urban	83-88	10	
	8	8	53-308	145	Sweden	Urban	1989	9	Near Stockholm
	4	4	7-150	66	Elk River, MN	Rural	1988	3	Agriculture
	12	12	6-50	24	England	Residential	1990	4	Rural
	19	19	17-660	156	England	Urban	NR	11	
	3	3	11-16	13	Various parts of Europe	Rural	NR	12	
	2	2	270-1900	1085	Various parts of Europe	Industrial		12	
	65	NR	4.3-212	41	British Isles	Background	NR	13	
	30	0	ND	NA	Ontario and U.S. Midwestern states	Rural	NR	14	
	47	6	ND-260	12.1	Ontario and U.S. Midwestern states	Urban	NR	14	
	20	7	ND-420	62.3	Ontario and U.S. Midwestern states	Industrial	NR	14	
	13	13	8.5-61.9	25.5	Salzburg, Austria	Urban	1990/91	5	
	5	5	13.0-73.4	38.3	Salzburg, Austria	Industrial	1990/91	5	
	6	4	ND-32.7	10.4	Salzburg, Austria	Rural	1990/91	5	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	53	32	ND-610	50.65	British Columbia, Canada	Background	1995	6	
	31	18	ND-79000	7387.93	British Columbia, Canada	Near Impacted site	1995	6	
HxCDFs (continued)	47	38	ND-97000	6361.66	British Columbia, Canada	Impacted site	1995	6	
	14	NR	5.6-21.1	10.7	West Germany	Background	NR	7	Plowland
	7	NR	4.2-31.7	15.2	West Germany	Background	NR	7	Grassland
	9	NR	28.2-699.4	229.0	West Germany	Background	NR	7	Deciduous Forest
	11	NR	45.6-655.3	169.5	West Germany	Background	NR	7	Coniferous Forest
	35	35	0.72-373.0	40.99	Connecticut	Urban	1987/90	15	Pre-operational
	7	7	5.5-2.5	16.0	Yarmouth, ME	Background	1996	16	
Heptachlorodibenzofurans (MW=409.31)									
1,2,3,4,6,7,8-HpCDF	NR	NR	NR	190000	Finland	Industrial	NR	2	
	8	8	31-134	73	Sweden	Urban	1989	9	Near Stockholm
	4	4	11-80	47	Elk River, MN	Rural	1988	3	Agriculture
	13	13	5.7-38.8	17.1	Salzburg, Austria	Urban	1990/91	5	
	5	5	8.2-85	28.7	Salzburg, Austria	Industrial	1990/91	5	
	6	6	3.1-13.5	7.2	Salzburg, Austria	Rural	1990/91	5	
	53	30	ND-300	42.26	British Columbia, Canada	Background	1995	6	
	31	19	ND-43000	3334.85	British Columbia, Canada	Near Impacted site	1995	6	
	47	34	ND-71000	4107.19	British Columbia, Canada	Impacted site	1995	6	
	14	NR	3.2-24.7	9.5	West Germany	Background	NR	7	Plowland
	7	NR	4.6-33.9	13.1	West Germany	Background	NR	7	Grassland
	9	NR	24.7-697.0	183.6	West Germany	Background	NR	7	Deciduous Forest
	11	NR	23.3-645.9	139.9	West Germany	Background	NR	7	Coniferous Forest
	3	3	3.3-6.46	4.060	Ohio	Background	1995	8	
	4	4	106.75-1340.6	640.950	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	18	6.11-138.76	41.747	Ohio	Urban	1995	8	
	35	35	1.01-105.0	17.0	Connecticut	Urban	1987/90	15	Pre-operational
	8	8	5.8-26	14.2	Yarmouth, ME	Background	1996	16	
	162	161	0.083-450	26	Denver Front Range	Various Land Uses	99-00	17	background

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8,9-HpCDF	NR	NR	NR	<5	Finland	Industrial	NR	2	
	8	2	ND-6.3	1	Sweden	Urban	1989	9	Near Stockholm
	4	0	ND	NA	Elk River, MN	Rural	1988	3	Agriculture
1,2,3,4,7,8,9-HpCDF (continued)	13	11	ND-4.2	1.3	Salzburg, Austria	Urban	1990/91	5	
	5	2	ND-4.1	2.6	Salzburg, Austria	Industrial	1990/91	5	
	6	4	ND-1.7	0.7	Salzburg, Austria	Rural	1990/91	5	
	53	6	ND-45	1.59	British Columbia, Canada	Background	1995	6	
	31	8	ND-900	81.76	British Columbia, Canada	Near Impacted site	1995	6	
	47	22	ND-7100	236.27	British Columbia, Canada	Impacted site	1995	6	
	14	NR	0.4-1.6	1.0	West Germany	Background	NR	7	Plowland
	7	NR	0.8-2.8	1.7	West Germany	Background	NR	7	Grassland
	9	NR	2.3-63.4	15.8	West Germany	Background	NR	7	Deciduous forest
	11	NR	1.6-50.3	10.3	West Germany	Background	NR	7	Coniferous forest
	3	1	ND-0.35	0.267	Ohio	Background	1995	8	
	4	4	9.3-123.81	57.888	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	16	ND-15.05	3.815	Ohio	Urban	1995	8	
	35	33	0.03-9.70	1.21	Connecticut	Urban	1987/90	15	Pre-operational
	8	6	0.98-2.1	1.01	Yarmouth, ME	Background	1996	16	
	162	161	0.0052-27	2.1	Denver Front Range	Various Land Uses	99-00	17	background
HpCDFs	1	1	15400	15400	Midland, MI	Industrial	1983	1	
	NR	NR	NR	140000	Finland	Industrial	NR	2	
	8	6	ND-820	300	Midland, MI	Residential	1983	1	
	5	1	ND-43	9	Middletown, OH	Residential	1983	1	
	3	0	ND(9.0)	NA	MN	Pristine	1983	1	
	11	NR	ND-180	30	Canada	Urban	1983	10	Near Incinerator
	12	0	ND	NA	Canada	Urban	1987	10	Near Incinerator
	43	0	ND	NA	Canada	Rural	83-88	10	
	29	NR	ND-410	29	Canada	Urban	83-88	10	
	8	8	31-187	81	Sweden	Urban	1989	9	Near Stockholm

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	4	4	30-260	100	Elk River, MN	Rural	1988	3	Agriculture
	12	12	4-59	20	England	Residential	1990	4	Rural
	19	19	16-458	152	England	Urban	NR	11	
	3	3	14-22	18	Various parts of Europe	Rural	NR	12	
HpCDFs (continued)	2	2	260-4500	2380	Various parts of Europe	Industrial	NR	12	
	65	NR	1.5-138	26	British Isles	Background	NR	13	
	47	10	ND-820	60.2	Ontario and U.S. Midwestern states	Urban	NR	14	
	20	15	ND-3750	550	Ontario and U.S. Midwestern states	Industrial	NR	14	
	30	0	ND	NA	Ontario and U.S. Midwestern states	Rural	NR	14	
	13	13	7.8-61.6	27.1	Salzburg, Austria	Urban	1990/91	5	
	5	5	10.8-85.0	34.2	Salzburg, Austria	Industrial	1990/91	5	
	6	6	5.5-19.2	9.8	Salzburg, Austria	Rural	1990/91	5	
	53	33	ND-890	112.99	British Columbia, Canada	Background	1995	6	
	31	19	ND-130000	9330.42	British Columbia, Canada	Near Impacted Site	1995	6	
	47	36	ND-580000	20235.95	British Columbia, Canada	Impacted site	1995	6	
	14	NR	3.2-31.2	12.9	West Germany	Background	NR	7	Plowland
	7	NR	4.6-44.4	17.5	West Germany	Background	NR	7	Grassland
	9	NR	33.7-922.9	245.5	West Germany	Background	NR	7	Deciduous forest
	11	NR	32.4-876.6	187.4	West Germany	Background	NR	7	Coniferous
	35	35	1.66-188.0	33.21	Connecticut	Urban	1987/90	15	Pre-operational
	8	8	12.9-82	39.4	Yarmouth, ME	Background	1996	16	
Octachlorodibenzofurans (MW=444.76)									
1,2,3,4,6,7,8,9-OCDF	1	1	8600	8600	Midland, MI	Industrial	1983	1	
	8	6	ND-660	240	Midland, MI	Residential	1983	1	
	5	1	ND-50	10	Middletown, OH	Residential	1983	1	
	3	0	ND(10)	NA	MN	Pristine	1983	1	
	NR	NR	NR	3000	Finland	Industrial	NR	2	

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	11	NR	ND-33	4	Canada	Urban	1983	10	Near Incinerator
	12	NR	ND-230	43	Canada	Urban	1987	10	Near Incinerator

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,6,7,8,9-OCDF (continued)	43	0	ND	NA	Canada	Rural	83-88	10	
	29	NR	ND-600	50	Canada	Urban	83-88	10	
	8	1	ND-19.0	2	Sweden	Urban	1989	9	Near Stockholm
	4	3	60-270	113	Elk River, MN	Rural	1988	3	Agriculture
	12	12	10-90	30	England	Residential	1990	4	Rural
	19	19	7-1100	196	England	Urban	NR	11	
	1	1	5.7	5.7	Various parts of Europe	Rural	NR	12	
	65	NR	ND-144	27	British Isles	Background	NR	13	
	47	15	ND-660	60	Canada and USA	Urban	NR	14	
	20	15	ND-5200	632	Canada and USA	Industrial	NR	14	
	30	0	ND	NA	Canada and USA	Rural	NR	14	
	2	2	68-71	69.5	Various parts of Europe	Industrial	NR	12	
	3	3	4.7-18.02	10.717	Ohio	Background	1995	8	
	4	4	44.74-307.96	184.495	Ohio	Impacted site	1995	8	Near waste-to-energy facility
	18	18	3.53-199.37	44.282	Ohio	Urban	1995	8	
	35	35	20.4-4,970	814.3	Connecticut	Urban	1987/90	15	Pre-operational
	8	8	13-95	42.3	Yarmouth, ME	Background	1996	16	
	162	161	0.32-1,500	72	Denver Front Range	Various Land Uses	99-00	17	background

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects if congener-specific detection limits were given; when detection limits were not given, zero was used for nondetects.
NA = Not available.
NR = Not reported.
ND = Non-detect.
Detection limits varied by study and were different for different compounds, but generally were 1 to 5 ng/kg (ppt). Descriptions provided were those given by reference or surmised from study description when not given.

Sources:
1. U.S. EPA (1985)
2. Kitunen and Salkinoja-Salonen (1990)
3. Reed et al. (1990)
4. Stenhouse and Badsha (1990)
5. Boos et al. (1992)
6. BC Environment (1995)
7. Rotard et al. (1994)
9. Broman et al. (1990)
10. Pearson et al. (1990)
11. Creaser et al. (1990)
12. Rappe and Kjeller (1987)
13. Creaser et al. (1989)
14. Birmingham (1990)
15. MRI (1992)
17. U.S. EPA Region 8 (2000)

Table B-5. Environmental Levels of Dibenzofurans in Soil (ppt) (continued)

8. U.S. EPA (1996)

16. Tewhey Associates (1997)

Table B-6. Environmental Levels of Dioxins in Water (ppq)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Samp. year	Ref. no.	Comments
Tetrachlorodibenzo-p-dioxins (MW=321.98)									
2,3,7,8-TCDD	1	0	ND(0.7)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	2	0	ND(.02-.024)	NA	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
TCDDs	185	1	ND-40	2.70	Ontario, Canada	NR	83-89	3	raw surface drinking water
	22	0	ND(.4-2.6)	NA	New York State	NR	86-88	1	treated surface drinking water
	1	1	1.7	1.7	Lockport, New York	NR	88	1	raw surface drinking water
	2	2	.05-.084	.067	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
Pentachlorodibenzo-p-dioxins (MW=356.42)									
1,2,3,7,8-PeCDD	1	0	ND(1.0)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	2	0	ND(.025-.039)	NA	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
PeCDDs	1	0	ND(1.0)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	22	0	ND(1.2-7.4)	NA	New York State	NR	86-88	1	treated surface drinking water
	2	2	.067-.12	.094	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
Hexachlorodibenzo-p-dioxins (MW=390.87)									
1,2,3,4,7,8-HxCDD	1	0	ND(1.8)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	2	1	ND-.054	.027	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
1,2,3,6,7,8-HxCDD	1	0	ND(1.5)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	2	1	ND-.12	.06	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
1,2,3,7,8,9-HxCDD	1	0	ND(1.5)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	2	1	ND-.075	.038	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water

Table B-6. Environmental Levels of Dioxins in Water (ppq) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Samp. year	Ref. no.	Comments
HxCDDs	1	0	ND(1.5)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	22	0	ND(.4-4.7)	NA	New York State	NR	86-88	1	treated surface drinking water
	2	2	.13-.67	.4	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
Heptachlorodibenzo-p-dioxins (MW=425.31)									
1,2,3,4,6,7,8-HpCDD	1	0	ND(2.8)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	2	2	.15-.30	.22	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
HpCDDs	1	0	ND(2.8)	NA	Lockport, New York	NR	88	1	raw surface drinking water
	22	0	ND(.4-6.8)	NA	New York State	NR	86-88	1	treated surface drinking water
	2	2	.17-.64	.40	Eman River, Sweden	PCB contaminated	NR	2	raw surface drinking water
Octachlorodibenzo-p-dioxin (MW=460.76)									
1,2,3,4,6,7,8,9-OCDD	185	32	ND-175	10.6	Ontario, Canada	NR	83-89	3	raw surface drinking water
	214	4	ND-46	3.16	Ontario, Canada	NR	83-89	3	treated surface drinking water

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, one-half the limit of detection was used in non-detects. Therefore, it is possible to have mean concentrations greater than the range (e.g., reported detection limit for nondetects greater than the positive sample).
NA = not applicable;
ND = non-detected (limit of detection);
NR = not reported;
Descriptions provided were those given by reference or surmised from study description when not given.

Sources: 1. Meyer et al. (1989)
2. Rappe et al. (1989a)
3. Jobb et al. (1990)

Table B-7. Environmental Levels of Dibenzofurans in Water (ppq)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Samp. year	Ref. no.	Comments
Tetrachlorodibenzofurans (MW=305.98)									
2,3,7,8-TCDF	2	2	.022-.026	.024	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
	1	0	ND(0.7)	NA	Lockport, New York	NR	88	2	raw surface drinking water
TCDFs	22	1	ND-2.6	0.12	New York State	NR	86-88	2	treated surface drinking water
	1	1	18	18	Lockport, New York	NR	88	2	raw surface drinking water
	2	2	.21-.23	0.22	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
Pentachlorodibenzofurans (MW=340.42)									
1,2,3,7,8-PeCDF	1	1	2.0	2.0	Lockport, New York	NR	88	2	raw surface drinking water
2,3,4,7,8-PeCDF	2	2	.014-.019	.016	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
	1	0	ND(1.0)	NA	Lockport, New York	NR	88	2	raw surface drinking water
1,2,3,4,8/1,2,3,7,8-PeCDF	2	2	.013-.025	.019	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
PeCDFs	1	1	27	27	Lockport, New York	NR	88	2	raw surface drinking water
	22	0	ND(0.3-4.0)	NA	New York State	NR	86-88	2	treated surface drinking water
	2	2	.13-.21	.17	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
Hexachlorodibenzofurans (MW=374.87)									
1,2,3,4,7,8-HxCDF	1	1	39	39	Lockport, New York	NR	88	2	raw surface drinking water
1,2,3,6,7,8-HxCDF	1	1	9.2	9.2	Lockport, New York	NR	88	2	raw surface drinking water
	2	2	.019-.025	.022	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
2,3,4,6,7,8-HxCDF	1	0	ND(1.3)	NA	Lockport, New York	NR	88	2	raw surface drinking water
	2	1	ND-.027	.014	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
1,2,3,7,8,9-HxCDF	1	0	ND(1.2)	NA	Lockport, New York	NR	88	2	raw surface drinking water
	2	1	ND-.022	.011	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water

Table B-7. Environmental Levels of Dibenzofurans in Water (ppq) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Samp. year	Ref. no.	Comments
1,2,3,4,7,9/1,2,3,4,7,8-HxCDF	2	2	.021-.026	.024	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
HxCDFs	1	1	85	NA	Lockport, New York	NR	88	2	raw surface drinking water
	22	0	ND(.3-4.4)	NA	New York State	NR	86-88	2	treated surface drinking water
	2	2	.17-.19	.18	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
Heptachlorodibenzofurans (MW=409.31)									
1,2,3,4,6,7,8-HpCDF	1	1	210	210	Lockport, New York	NR	88	2	raw surface drinking water
	2	2	.083-.13	.11	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
1,2,3,4,7,8,9-HpCDF	2	2	.03-.058	.044	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
HpCDFs	1	1	210	210	Lockport, New York	NR	88	2	raw surface drinking water
	22	0	ND(.8-6.6)	NA	New York State	NR	86-88	2	treated surface drinking water
	2	2	.18-.35	.26	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water
Octachlorodibenzofurans (MW=444.76)									
1,2,3,4,6,7,8,9-OCDF	22	2	ND-0.8	2.45	New York State	NR	86-88	2	treated surface drinking water
	1	1	230	230	Lockport, New York	NR	88	2	raw surface drinking water
	2	2	.15-.36	.26	Eman River, Sweden	PCB contaminated	NR	1	raw surface drinking water

Footnote References

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, one-half the detection limit was used for non-detects. Therefore, it is possible to have mean concentrations greater than the range (e.g., reported detection limit for nondetects greater than the positive sample).
NA = not applicable;
ND = non-detected (limit of detection);
NR = not reported.
Descriptions provided were those given by reference or surmised from study description when not given.

Sources: 1. Rappe et al. (1989a)
2. Meyer et al. (1989)

Table B-8. Environmental Levels of Dioxins in Sediments (ppt)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
Tetrachlorodibenzo-p-dioxins (MW=321.98)										
2,3,7,8-TCDD	18	0	ND	NA	Dry	South Central Finland	Various	88/89	1	A,B
	9	8	ND-730	236	Dry	Newark, NJ	Industrial	85/86	2	0-2", A,C
	4	4	75-2500	1769	Dry	Newark, NJ	Industrial	85/86	2	2-4", A,C
	2	2	190-1200	695	Dry	Newark, NJ	Industrial	85/86	2	4-8", A,C
	1	1	680	680	Dry	Newark, NJ	Industrial	85/86	2	12-16", A,C
	1	1	150	150	Dry	Newark, NJ	Industrial	85/86	2	20-24", A,C
	2	2	660-1100	880	Dry	Newark, NJ	Industrial	85/86	2	24-28", A,C
	3	1	ND-7600	367	Dry	Newark, NJ	Industrial	85/86	2	28-32", A,C
	3	3	390-2900	1227	Dry	Newark, NJ	Industrial	85/86	2	32-36", A,C
	1	1	93	93	Dry	Newark, NJ	Industrial	85/86	2	40-44", A,C
	2	1	ND-7600	3800	Dry	Newark, NJ	Industrial	85/86	2	48-52", A,C
	1	1	21,000	21000	Dry	Newark, NJ	Industrial	85/86	2	108-111", A,C
	1	0	ND	NA	Dry	Long Island Sound	Reference Site	NR	3	A
	12	6	ND-57	13	Dry	New England	Industrial	NR	3	A/3 sites
	4	0	ND	NA	Dry	Seattle, WA	Industrial	NR	3	A
	4	0	ND	NA	NR	Central Minnesota	Rural	NR	4	A
	3	2	ND-2.4	1.5	NR	Stockholm Sweden	Various	NR	5	A
	2	2	1.0-1.4	1.2	Dry	Baltic Sea	Reference Site	NR	6	A
	4	4	1.9-26	9.6	Dry	Iggesund Sweden	Industrial	NR	6	A/papermill

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
2,3,7,8-TCDD (continued)	4	4	0.03-0.11	0.06	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	0-1 cm, E
	1	1	0.04	0.04	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	4-6 cm, E
	1	1	0.01	0.01	Dry	Fjord between Demark, Sweden, and Norway	Industrial	87	7	9-13 cm, E
	5	5	3.4-1,500	375	NR	Hamburg Germany	Urban	NR	8	
	4	1	ND-3	1.19	NR	Dala River, Sweden	Industrial	88	9	0-1 cm
	6	6	1.2-32	12.0	NR	Lake Vattern, Sweden	Industrial	88	9	0-1 cm
	5	3	ND-110	28.1	NR	Lake Vanern, Sweden	Industrial	88	9	0-1 cm
	61	54	NR	0.30	Dry	Southern Mississippi	NR	94	10	--
	12	0	ND	NA	Dry	British Columbia	Background	NR	11	--
	14	2	ND-2.7	0.23	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	1	ND-1.1	0.16	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	6	ND-0.78	0.27	Dry	Various U.S. Lakes	Background	--	12	--
	162	125	0.04-23.10	2.30	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	10	ND-510	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	5	0	ND	ND	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
TCDDs	18	14	ND-1,400	372	Dry	South Central Finland	Various	88/89	1	AB
	1	1	26	26	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	0-0.5 cm, A,D
	1	1	12	12	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	5-6 cm, A,D
	1	0	ND	NA	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	8-9 cm, A,D
	4	0	ND	NA	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	0	ND	NA	NR	Ontario Canada	Industrial	88	14	A/25 sites
	12	7	ND-44	17	NR	NY/Mass	NR	NR	15	A
	3	3	21-69	38	NR	Stockholm Sweden	Various	NR	5	A
	4	4	21-66	45	Dry	Iggesund Sweden	Industrial	NR	6	A/paper mill
	2	2	19-35	27	Dry	Baltic Sea	Reference Site	NR	6	A
	4	4	1.4-6.7	4.2	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	0-2 cm, E
	1	1	13	13	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	4-6 cm, E
	1	1	5.0	5.0	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	9-13 cm, E
	5	5	80-1,700	564	NR	Hamburg Germany	Urban	NR	8	
	12	0	ND	NA	Dry	British Columbia	Background	NR	11	--
	14	4	ND-210.0	26.0	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
TCDDs (continued)	7	2	ND-32.0	5.3	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	10	ND-21.2	6.45	Dry	Various U.S. Lakes	Background	--	12	--
	162	150	0.07-48.7	9.34	Dry	Connecticut	Urban	87-90	17	Pre-operational
	5	0	ND	ND	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
Pentachlorodibenzo-p-dioxins (MW=356.42)										
1,2,3,7,8-PeCDD	4	3	ND-25	7.68	NR	Dala River, Sweden	Industrial	88	9	0-1 cm
	6	6	7.4-95	44.1	NR	Lake Vattern, Sweden	Industrial	88	9	0-1 cm
	5	4	ND-100	49.6	NR	Lake Vanern, Sweden	Industrial	88	9	0-1 cm
	12	0	ND	NA	Dry	British Columbia	Background	NR	11	--
	14	3	ND-30.0	4.2	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	1	ND-6.6	0.94	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	6	ND-3.91	0.99	Dry	Various U.S. Lakes	Background	--	12	--
	161	154	0.03-48.7	3.49	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	2	ND-22	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	5	2	ND-0.18	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
PeCDDs	1	1	12	12	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	0-0.5 cm, A,D
	1	1	11	11	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	5-6 cm, A,D
	1	0	ND	NA	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	8-9 cm, A,D
	4	0	ND	NA	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	0	ND	NA	NR	Ontario Canada	Industrial	88	14	A/25 sites
	12	7	ND-235	50	NR	NY/Mass	NR	NR	15	A
	3	3	86-230	138	NR	Stockholm Sweden	Various	NR	5	A
	4	4	52-500	209	Dry	Iggesund Sweden	Industrial	NR	6	A/paper mill
	2	2	52-100	76	Dry	Baltic Sea	Reference Site	NR	6	A
	4	4	1.7-41	19	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	0-2 cm, E
	1	1	6.6	6.6	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	4-6 cm, E
	1	1	15	15	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	9-13 cm, E
	5	5	260-2,700	1,112	NR	Hamburg Germany	Urban	NR	8	
	12	0	ND	NA	Dry	British Columbia	Background	NR	11	--
	14	5	ND-400.0	79.8	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	1	ND-86.0	12.3	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
PeCDDs (continued)	11	10	ND-28.7	9.1	Dry	Various U.S. Lakes	Background	--	12	--
	162	158	0.03-327.0	28.85	Dry	Connecticut	Urban	87-90	17	Pre-operational
	5	5	0.11-4.9	1.5	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
Hexachlorodibenzo-p-dioxins (MW=390.87)										
1,2,3,4,7,8-HxCDD	4	3	ND-19	6.68	NR	Dala River, Sweden	Industrial	88	9	0-1 cm
	6	6	6.1-33	20.5	NR	Lake Vattern, Sweden	Industrial	88	9	0-1 cm
	5	5	14-94	36.0	NR	Lake Vanern, Sweden	Industrial	88	9	0-1 cm
	12	1	ND-7.9	0.66	Dry	British Columbia	Background	NR	11	--
	14	4	ND-82.0	7.9	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	1	ND-11.0	1.6	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	10	ND-6.87	1.8	Dry	Various U.S. Lakes	Background	--	12	--
	166	149	0.05-31.60	4.24	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	4	ND-9.6	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	5	2	ND-0.49	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
1,2,3,6,7,8-HxCDD	4	4	4.9-120	36.4	NR	Dala River, Sweden	Industrial	88	9	0-1 cm
	6	6	21-450	188	NR	Lake Vattern, Sweden	Industrial	88	9	0-1 cm
	5	5	36-600	236	NR	Lake Vanern, Sweden	Industrial	88	9	0-1 cm

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
1,2,3,6,7,8-HxCDD (continued)	12	2	ND-67.0	11.2	Dry	British Columbia	Background	NR	11	--
	14	9	ND-540.0	127.2	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	3	ND-220.0	51.07	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	10	ND-21.6	4.7	Dry	Various U.S. Lakes	Background	--	12	--
	166	163	0.10-107.0	15.26	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	10	ND-46	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	5	4	ND-1.7	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
1,2,3,7,8,9-HxCDD	4	4	3.9-51	18.1	NR	Dala River, Sweden	Industrial	88	9	0-1 cm
	6	6	18-200	95.5	NR	Lake Vattern, Sweden	Industrial	88	9	0-1 cm
	5	5	18-330	149	NR	Lake Vanern, Sweden	Industrial	88	9	0-1 cm
	12	1	ND-17.5	1.5	Dry	British Columbia	Background	NR	11	--
	14	6	ND-290.0	47.9	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	3	ND-39.0	12.1	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	10	ND-14.55	4.04	Dry	Various U.S. Lakes	Background	--	12	--
	166	164	0.09-98.3	11.24	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	4	ND-25	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	5	5	0.28-5.9	2.5	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
HxCDDs	1	1	10	10	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	0-0.5 cm, A,D
	1	1	8	8	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	5-6 cm, A,D
	1	0	ND	NA	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	13	8-9 cm, A,D
	4	2	ND-14	5.2	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	6	ND-5,700	1,157	NR	Ontario Canada	Industrial	88	14	A/25 sites
	12	10	ND-1,335	399	NR	NY/Mass	NR	NR	15	A
	3	3	16-49	28	NR	Stockholm Sweden	Various	NR	5	A
	2	2	120-170	145	Dry	Baltic Sea	Reference Site	NR	6	A
	4	4	130-1,900	608	Dry	Iggesund Sweden	Industrial	NR	6	A/paper mill
	4	4	2.3-27.0	14	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	0-2 cm, E
	1	1	16	16	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	4-6 cm, E
	1	1	14	14	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	9-13 cm, E
	5	5	580-7,500	2,744	NR	Hamburg Germany	Urban	NR	8	
	12	4	ND-355.0	55.9	Dry	British Columbia	Background	NR	11	--
	14	9	ND-3500	678.4	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	3	ND-1000	236.4	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
HxCDDs (continued)	11	10	ND-157	43.3	Dry	Various U.S. Lakes	Background	--	12	--
	166	165	0.09-950.0	130.2	Dry	Connecticut	Urban	87-90	17	Pre-operational
	5	5	2.4-46	20	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
Heptachlorodibenzo-p-dioxins (MW=425.31)										
1,2,3,4,6,7,8-HpCDD	12	5	ND-810.0	116.5	Dry	British Columbia	Background	NR	11	--
	14	11	ND-5100.0	811.9	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	3	ND-850.0	185.1	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	10	ND-431	100.6	Dry	Various U.S. Lakes	Background	--	12	--
	166	166	0.94-2,680	306.9	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	19	28-2,100	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	5	5	11-130	59	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
HpCDDs	4	4	7.3-110	71	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	20	ND-320,000	51,680	NR	Ontario Canada	Industrial	88	14	A/25 sites
	12	11	ND-18,950	4,168	NR	NY/Mass	NR	NR	15	A
	3	3	880-5,700	2,233	NR	Stockholm Sweden	Various	NR	5	A
	2	2	79-210	145	Dry	Baltic Sea	Reference Site	NR	6	A
	4	4	90-340	190	Dry	Iggesund Sweden	Industrial	NR	6	A/paper mill

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
HpCDDs (continued)	4	4	2.2-19	12.4	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	0-2 cm, E
	1	1	7.2	7.2	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	4-6 cm, E
	1	1	7.1	7.1	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	9-13 cm, E
	5	5	1,300-8,600	4,040	NR	Hamburg Germany	Urban	NR	8	
	12	5	ND-1500	210.8	Dry	British Columbia	Background	NR	11	--
	14	1	ND-8000	1329	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	3	ND-1500	325.7	Dry	Brisith Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	10	ND-828	199.0	Dry	Various U.S. Lakes	Background	--	12	--
	166	166	1.77-5,820	647.0	Dry	Connecticut	Urban	87-90	17	Pre-operational
	5	5	17-300	134	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core
Octachlorodibenzo-p-dioxin (MW=460.76)										
1,2,3,4,6,7,8,9-OCDD	18	3	ND-42	6.1	Dry	South Central Finland	Various	88/89	1	A,B
	9	9	3,100-14,000	8,100	Dry	Newark, NJ	Industrial	85/86	2	0-2", A,C
	4	4	5,300-23,000	14,100	Dry	Newark, NJ	Industrial	85/86	2	2-4", A,C
	2	2	10,000-31,000	20,500	Dry	Newark, NJ	Industrial	85/86	2	4-8", A,C
	1	1	7,500	7,500	Dry	Newark, NJ	Industrial	85/86	2	12-16", A,C
	1	1	5,900	5,900	Dry	Newark, NJ	Industrial	85/86	2	20-24", A,C

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
1,2,3,4,6,7,8,9-OCDD	2	2	11,000-19,000	15,000	Dry	Newark, NJ	Industrial	85/86	2	24-28", A,C
(continued)	2	2	5,500-22,000	13,800	Dry	Newark, NJ	Industrial	85/86	2	28-32", A,C
	3	3	5,600-42,000	17,800	Dry	Newark, NJ	Industrial	85/86	2	32-36", A,C
	1	1	5,500	5,500	Dry	Newark, NJ	Industrial	85/86	2	40-44", A,C
	2	2	4,400-24,000	14,200	Dry	Newark, NJ	Industrial	85/86	2	48-52", A,C
	1	1	38,000	38,000	Dry	Newark, NJ	Industrial	85/86	2	108-111", A,C
	1	1	560	560	Dry	Siskiwit Lake, Isle Royale, Lake Superior	Pristine	NR	13	0-0.5 cm, A,D
	1	1	390	390	Dry	Siskiwit Lake, Isle Royale, Lake Superior	Pristine	NR	13	5-6 cm, A,D
	1	1	54	54	Dry	Siskiwit Lake, Isle Royale, Lake Superior	Pristine	NR	13	8-9 cm, A,D
	4	4	450-600	518	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	20	ND-980,000	141,420	NR	Ontario Canada	Industrial	88	14	A/25 sites
	12	12	1,990-15,500	8,201	NR	NY/Mass	NR	NR	15	A
	7	7	12-250	145	Dry	Jackfish Bay, Lake Superior	Various	NR	16	Papermill, atmospheric contamination
	3	3	260-3,100	1,290	NR	Stockholm Sweden	Various	NR	5	A
	2	2	89-250	170	Dry	Baltic Sea	Reference Site	NR	6	A
	4	4	96-330	194	Dry	Iggesund Sweden	Industrial	NR	6	A/paper mill
	4	4	3.6-45	24	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	0-2 cm, E

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
1,2,3,4,6,7,8,9-OCDD (continued)	1	1	10	10	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	4-6 cm, E
	1	1	6.9	6.9	Dry	Fjord between Denmark, Sweden, and Norway	Industrial	87	7	9-13 cm, E
	5	5	2,800-15,000	7,560	NR	Hamburg Germany	Urban	NR	8	
	4	4	180-16,830	5195	NR	Dala River, Sweden	Industrial	88	9	0-1 cm
	6	6	800-2200	1775	NR	Lake Vattern, Sweden	Industrial	88	9	0-1 cm
	5	5	1320-6090	3040	NR	Lake Vanern, Sweden	Industrial	88	9	0-1 cm
	12	8	ND-4600	622.1	Dry	Brisith Columbia	Background	NR	11	--
	14	12	ND-23000	3079	Dry	British Columbia	Near Impacted Sites	NR	11	Chemical Sources
	7	4	ND-2700	540.5	Dry	British Columbia	Near Impacted Sites	NR	11	Combustion Sources
	11	11	3.0-990	400.4	Dry	Various U.S. Lakes	Background	--	12	--
	166	166	7.70-9,170	2,131	Dry	Connecticut	Urban	87-90	17	Pre-operational
	19	19	310-17,000	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	18	
	10	10	1,600-39,000	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	19	Sedimentation area
	5	5	150-7,200	2,560	Dry	Southern Mississippi Lakes	Pristine	95-96	20	Upper stratum of sediment core

[a] Key: A LOD (Ref 1) = 20 to 50 ppt, LOD (Ref 2) = 22 to 60 ppt, LOD (Ref 3) = 0.4 ppt, LOD (Ref 4) = 0.7 to 12.0 ppt, LOD (Ref 5) = 0.61 to 4.1 ppt, LOD (Ref 8) = 10 to 500 ppt, LOD (Ref 10) = 3 ppt, LOD (Ref 12) = 1 to 20 ppt, LOD (Ref 13) = 1 to 6.6 ppt.
B Dry surface sediments from 18 lakes.
C Industry produced 2,4,5-Trichlorophenate (2,4,5-T precursor).
D No anthropogenic inputs into drainage basin--only atmospheric sources into lake.
E Mg-Production Facility.

Table B-8. Environmental Levels of Dioxins in Sediments (ppt) (continued)

Notes

NR = Not Reported
NA = Not Applicable
ND = Not Detected
ppt = Parts per trillion

Sources:

1. Koistinen et al. (1990)
2. Bopp et al. (1991)
3. Norwood et al. (1989)
4. Reed et al. (1990)
5. Rappe and Kjeller (1987)
6. Rappe et al. (1989b)
7. Oehme et al. (1989)
8. Gotz and Schumacher (1990)
9. Kjeller et al. (1990)
10. Fiedler et al. (1995)
11. B.C. Environment (1995)
12. Cleverly et al. (1996)
13. Czuczwa et al. (1984)
14. McKee et al. (1990)
15. Petty et al. (1982)
16. Sherman et al. (1990)
17. MRI (1992)
18. Wenning et al. (1992)
19. Rappe et al. (1997a)
20. Rappe et al. (1997b)

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
Tetrachlorodibenzofurans (MW=305.98)										
2,3,7,8-TCDF	18	0	ND(20-50)	NA	Dry	South Central Finland	Various	88/89	1	A,B
	9	9	24-490	232	Dry	Newark, NJ	Industrial	85/86	2	0-2", A,C
	4	4	150-1,400	855	Dry	Newark, NJ	Industrial	85/86	2	2-4", A,C
	2	2	580-1,200	890	Dry	Newark, NJ	Industrial	85/86	2	4-8", A,C
	1	1	370	370	Dry	Newark, NJ	Industrial	85/86	2	12-16", A,C
	1	1	300	300	Dry	Newark, NJ	Industrial	85/86	2	20-24", A,C
	2	2	300-390	345	Dry	Newark, NJ	Industrial	85/86	2	24-28", A,C
	3	2	ND-530	243	Dry	Newark, NJ	Industrial	85/86	2	28-32", A,C
	3	3	190-730	370	Dry	Newark, NJ	Industrial	85/86	2	32-36", A,C
	1	1	140	140	Dry	Newark, NJ	Industrial	85/86	2	40-44", A,C
	2	2	80-3,100	1,590	Dry	Newark, NJ	Industrial	85/86	2	48-52", A,C
	1	1	4,500	4,500	Dry	Newark, NJ	Industrial	85/86	2	108-111", A,C
	1	1	15	15	Dry	Long Island Sound	Reference Site	NR	3	A
	12	12	8.8-1,400	566	Dry	New England	Industrial	NR	3	A/3 sites
	4	0	ND(0.7-12)	NA	Dry	Seattle, WA	Industrial	NR	3	A
	4	1	ND-0.31	0.08	NR	Central Minnesota	Rural	NR	4	A/4 sites
	2	2	8.3-14	11	Dry	Baltic Sea	Reference Site	NR	5	A
	4	4	11-210	72	Dry	Iggesund Sweden	Industrial	NR	5	A/papermill
	4	4	0.7-9.6	5.2	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	0-2cm, E

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
2,3,7,8-TCDF (continued)	1	1	13	13	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	4-6cm, E
	1	1	5.2	5.2	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	9-13cm, E
	4	4	4.9-170	46.5	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	41-320	176	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	54-810	241	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	1	ND-17	1.42	Dry	British Columbia	Background	NR	8	--
	14	3	ND-3.0	3.8	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	2	ND-12.0	3.0	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	8	ND-8.44	1.95	Dry	Various U.S. Lakes	Background	--	9	--
	142	141	0.03-101	13.56	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	19	2.8-480	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	3	ND-0.18	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
TCDFs	1	1	15	15	Dry	Siskiwit Lake, Isle Royale, Lake Superior	Pristine	NR	10	0-0.5cm, A,D
	1	1	18	18	Dry	Siskiwit Lake, Isle Royale, Lake Superior	Pristine	NR	10	5-6cm, A,D
	1	0	ND(0.4)	NA	Dry	Siskiwit Lake, Isle Royale, Lake Superior	Pristine	NR	10	8-9cm, A,D
	4	2	ND-0.54	0.21	NR	Central Minnesota	Rural	NR	4	A/4 sites

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
TCDFs (continued)	25	0	ND(10-700)	NA	NR	Ontario Canada	Industrial	88	11	A/25 sites
	12	11	ND-200	58	NR	NY/MASS	NR	NR	12	A
	7	7	2.4-6,223	1,260	Dry	Jackfish Bay, Lake Superior	Various	NR	13	Papermill/ atmospheric contamination
	3	3	120-290	187	NR	Stockholm Sweden	Various	NR	14	A
	2	2	87-130	109	Dry	Baltic Sea	Reference Site	NR	5	A
	4	4	79-360	180	Dry	Iggesund Sweden	Industrial	NR	5	A/papermill
	4	4	6.7-54	30	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	0-2cm, E
	1	1	63	63	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	4-6cm, E
	1	1	23	23	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	9-13cm, E
	5	5	170-1070	526	NR	Hamburg Germany	Urban	NR	15	
	12	1	ND-17.0	1.42	Dry	British Columbia	Background	NR	8	--
	14	5	ND-88	15.9	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	2	ND-47.0	9.9	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	11	1.68-91.7	25.7	Dry	Various U.S. Lakes	Background	--	9	--
	142	141	0.03-290	62.78	Dry	Connecticut	Urban	87-90	16	Pre-operational
	5	3	ND-0.18	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
Pentachlorodibenzofurans (MW=340.42)										
1,2,3,7,8-PeCDF	4	4	5.6-110	34.4	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	27-120	74.3	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	50-300	120	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	0	ND	NA	Dry	British Columbia	Background	NR	8	--
	14	2	ND-8.8	0.68	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	1	ND-4.4	0.63	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	8	ND-3.1	0.94	Dry	Various U.S. Lakes	Background	--	9	--
	163	160	0.01-37.80	4.98	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	6	ND-36	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	2	ND-0.3	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
2,3,4,7,8-PeCDF	4	4	7.8-99	34.7	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	25-110	74.2	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	36-250	108	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	0	ND	NA	Dry	British Columbia	Background	NR	8	--
	14	2	ND-14.0	1.06	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	1	ND-7.5	1.07	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
2,3,4,7,8-PeCDF	11	9	ND-5.3	1.52	Dry	Various U.S. Lakes	Background	--	9	--
(continued)	163	158	0.01-49.50	5.36	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	11	ND-420	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	2	ND-0.078	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
PeCDFs	1	1	5.0	5.0	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	0-0.5cm A,D
	1	1	2.0	2.0	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	5-6cm A,D
	1	0	ND(0.4)	NA	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	8-9cm A,D
	4	2	ND-25	7.4	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	0	ND(10-700)	NA	NR	Ontario Canada	Industrial	88	11	A/25 sites
	12	9	ND-193	64	NR	NY/MASS	NR	NR	12	A
	3	3	130-260	177	NR	Stockholm Sweden	Various	NR	14	A
	2	2	66-125	96	Dry	Baltic Sea	Reference Site	NR	5	A
	4	4	48-58	55	Dry	Iggesund Sweden	Industrial	NR	5	A/papermill
	4	4	7.7-81	47	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	0-2cm, E
	1	1	24	24	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	4-6cm, E
	1	1	44	44	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	9-13cm, E

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
PeCDFs (continued)	5	5	1,300-5,200	2,980	NR	Hamburg Germany	Urban	NR	15	
	12	3	ND-86.0	14.3	Dry	British Columbia	Background	NR	8	--
	14	8	ND-710.0	134.4	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	2	ND-310.0	53.5	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	11	0.384-66.8	17.8	Dry	Various U.S. Lakes	Background	--	9	--
	163	163	0.20-775.0	103.0	Dry	Connecticut	Urban	87-90	16	Pre-operational
	5	2	ND-0.52	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
Hexachlorodibenzofurans (MW=374.87)										
1,2,3,4,7,8-HxCDF	4	4	9.3-120	44.3	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	28-170	89.5	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	32-460	163	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	1	ND-13.0	1.08	Dry	British Columbia	Background	NR	8	--
	14	5	ND-82.0	12.3	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	2	ND-30.0	5.26	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	10	ND-4.67	1.87	Dry	Various U.S. Lakes	Background	--	9	--
	166	163	0.03-193.0	16.12	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	10	ND-410	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	1	ND-0.11	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
1,2,3,6,7,8-HxCDF	4	4	3.7-73	26.7	NR	Dala River, Sweden	Industrial	88	7	0-1 cm

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
	6	6	15-110	64.7	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	25-140	73.4	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	1	ND-12.0	1.00	Dry	British Columbia	Background	NR	8	--
	14	3	ND-98.0	10.2	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	1	ND-24.0	3.4	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	0	ND	NA	Dry	Various U.S. Lakes	Background	--	9	--
	166	165	0.01-66.70	6.95	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	8	ND-73	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	0	ND	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
1,2,3,7,8,9-HxCDF	4	3	ND(2)-25	9.38	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	2	ND-4.4	1.58	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	2	ND-14	5.68	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	0	ND	NA	Dry	British Columbia	Background	NR	8	--
	14	2	ND-40.0	2.9	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	2	ND-30.0	5.4	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	1	ND-0.20	0.25	Dry	Various U.S. Lakes	Background	--	9	--

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
1,2,3,7,8,9-HxCDF (continued)	166	84	0.01-10.30	1.26	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	10	ND-29	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	0	ND	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
2,3,4,6,7,8-HxCDF	4	4	1.8-78	26.2	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	32-130	77.7	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	36-110	70.8	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	0	ND	NA	Dry	British Columbia	Background	NR	8	--
	14	0	ND	NA	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	0	ND	NA	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	10	ND-4.43	1.68	Dry	Various U.S. Lakes	Background	--	9	--
	166	164	0.11-71.10	8.41	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	0	ND	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	0	ND	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
HxCDF	1	1	2.0	2.0	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	0-0.5cm, A,D
	1	1	2.0	2.0	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	5-6cm, A,D
	1	0	ND(0.4)	NA	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	8-9cm, A,D

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
HxCDF (continued)	4	1	ND-12	3.0	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	17	ND-6,500	1,339	NR	Ontario Canada	Industrial	88	11	A/25 sites
	12	10	ND-377	133	NR	NY/MASS	NR	NR	12	A
	3	3	92-250	187	NR	Stockholm Sweden	Various	NR	14	A
	2	2	78-150	114	Dry	Baltic Sea	Reference Site	NR	5	A
	4	4	59-150	104	Dry	Iggesund Sweden	Industrial	NR	5	A/papermill
	4	4	23-283	148	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	0-2cm, E
	1	1	166	166	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	4-6cm, E
	1	1	131	131	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	9-13cm, E
	5	5	930-8,600	4,106	NR	Hamburg Germany	Urban	NR	15	
	12	3	ND-405.0	59.3	Dry	British Columbia	Background	NR	8	--
	14	10	ND-3300	840.7	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	2	ND-1700	347.1	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	10	ND-145	38.0	Dry	Various U.S. Lakes	Background	--	9	--
	166	166	0.44-908.0	132.0	Dry	Connecticut	Urban	87-90	16	Pre-operational
	5	2	ND-1.8	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
Heptachlorodibenzofurans (MW=409.31)										
1,2,3,4,6,7,8-HpCDF	8	8	59-2180	558	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	12	12	130-1030	584	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	10	10	21-8400	1764	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	3	ND-310.0	43.97	Dry	British Columbia	Background	NR	8	--
	14	11	ND-2800	604.0	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	3	ND-700	134.1	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	1	ND-0.14	33.2	Dry	Various U.S. Lakes	Background	--	9	--
	166	166	0.23-1,148	93.58	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	18	ND-1,800	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	5	0.33-3.0	1.2	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
1,2,3,4,7,8,9-HpCDF	4	3	ND-42	14.2	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	4.3-91	33.2	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	4	ND-260	78.3	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	1	ND-7.7	0.64	Dry	British Columbia	Background	NR	8	--
	14	3	ND-59.0	8.2	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
1,2,3,4,7,8,9-HpCDF (continued)	7	1	ND-17.0	2.43	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	8	ND-8.9	2.13	Dry	Various U.S. Lakes	Background	--	9	--
	166	158	0.07-205.0	6.52	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	7	ND-48	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	0	ND	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
HpCDFs	4	3	ND-30	16	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	20	ND-53,000	11,715	NR	Ontario Canada	Industrial	88	11	A/25 sites
	12	10	ND-2,436	1,039	NR	NY/MASS	NR	NR	12	A
	3	3	190-1,500	997	NR	Stockholm Sweden	Various	NR	14	A
	2	2	79-180	130	Dry	Baltic Sea	Reference Site	NR	5	A
	4	4	11-410	178	Dry	Iggesund Sweden	Industrial	NR	5	A/papermill
	4	4	20-158	100	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	0-2cm, E
	1	1	43	43	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	4-6cm, E
	1	1	192	192	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	9-13cm, E
	5	5	560-4,300	2,358	NR	Hamburg Germany	Urban	NR	15	
	12	3	ND-790.0	115.6	Dry	British Columbia	Background	NR	8	--

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
HpCDFs (continued)	14	11	ND-9900	1772	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	3	ND-2000	3743	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	10	ND-349	82.8	Dry	Various U.S. Lakes	Background	--	9	--
	166	166	0.56-1,270	190.2	Dry	Connecticut	Urban	87-90	16	Pre-operational
	5	5	0.39-5.9	2.1	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core
Octachlorodibenzofurans (MW=444.76)										
1,2,3,4,6,7,8,9-OCDF	18	3	ND-160	14	Dry	South Central Finland	Various	88/89	1	A,B
	1	1	4	4	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	0-0.5cm, A,D
	1	1	3.2	3.2	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	5-6cm, A,D
	1	1	1.1	1.1	Dry	Siskiwit Lake, Isle Royale, Lake Michigan	Pristine	NR	10	8-9cm, A,D
	4	1	ND-23	5.8	NR	Central Minnesota	Rural	NR	4	A/4 sites
	25	21	ND-400,000	34,912	NR	Ontario Canada	Industrial	88	11	A/25 sites
	12	11	ND-1,010	460	NR	NY/MASS	NR	NR	12	A
	3	1	ND-39	14	NR	Stockholm Sweden	Various	NR	14	A
	2	1	ND-3.8	1.9	Dry	Baltic Sea	Reference Site	NR	5	A
	4	2	ND-15	5	Dry	Iggesund Sweden	Industrial	NR	5	A/Papermill
	4	4	58-151	96	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	0-2cm, E
1,2,3,4,6,7,8,9-OCDF (continued)	1	1	43	43	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	4-6cm, E

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Weight basis	Location	Location description	Sample year	Ref. no.	Comments[a]
	1	1	192	192	Dry	Fjord between Sweden, Norway and Denmark	Industrial	87	6	9-13cm, E
	5	5	660-5,200	2,712	NR	Hamburg Germany	Urban	NR	15	
	4	4	150-4250	1212	NR	Dala River, Sweden	Industrial	88	7	0-1 cm
	6	6	170-1310	602	NR	Lake Vattern, Sweden	Industrial	88	7	0-1 cm
	5	5	230-79,250	19,356	NR	Lake Vanern, Sweden	Industrial	88	7	0-1 cm
	12	3	ND-330.0	31.7	Dry	British Columbia	Background	NR	8	--
	14	10	ND-3200	639.0	Dry	British Columbia	Near Impacted Sites	NR	8	Chemical Sources
	7	3	ND-520.0	100.7	Dry	British Columbia	Near Impacted Sites	NR	8	Combustion Sources
	11	9	ND-385	103.6	Dry	Various U.S. Lakes	Background	--	9	--
	166	166	7.70-9,170	2,131	Dry	Connecticut	Urban	87-90	16	Pre-operational
	19	18	ND-2,400	NR	Dry	L. Passaic River & Newark Bay	Industrial	90	17	
	5	4	ND-4.8	NR	Dry	Southern Mississippi Lakes	Pristine	95-96	18	Upper stratum of sediment core

[a] Key:

A LOD (Ref. 1) = 20 to 50 ppt, LOD (Ref. 2) = 32 ppt, LOD (Ref. 3) = 0.4 ppt, LOD (Ref. 4) = 0.7 to 12.0 ppt, LOD (Ref. 5) = 0.61 to 4.1 ppt, LOD (Ref. 8) = 10 to 700 ppt, LOD (Ref. 10) = 3 ppt, LOD (ref. 12) = 1 to 20 ppt, LOD (Ref. 13) = 1 to 6.6 ppt.

B Dry surface sediments from 18 lakes.

C Industry produced 2,4,5 trichlorophenate (2,4,5T precursor).

D No anthropogenic inputs into drainage basin -- only atmospheric sources into lake.

E Mg-production facility.

Table B-9. Environmental Levels of Dibenzofurans in Sediment (ppt) (continued)

Notes

NR = Not Reported
NA = Not Applicable
ND = Not Detected
ppt = Parts per trillion

Sources:

1. Koistinen et al. (1990)
2. Bopp et al. (1991)
3. Norwood et al. (1989)
4. Reed et al. (1990)
5. Rappe et al. (1989b)
6. Oehme et al. (1989)
7. Kjeller et al. (1990)
8. BC Environment (1995)
9. Cleverly et al. (1996)
10. Czuczwa et al. (1984)
11. McKee et al. (1990)
12. Petty et al. (1982)
13. Sherman et al. (1990)
14. Rappe and Kjeller (1987)
15. Gotz and Schumacher (1990)
16. MRI (1992)
17. Wenning et al. (1992)
18. Rappe et al. (1997b)

Table B-10. Environmental Levels of PCBs in Sediment (ppt)

IUPAC number	Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
Tetrachloro-PCB (MW=291.99)											
77	3,3',4,4'-TCB	18	13	ND-550	138	Dry	South Central Finland	Various	88/89	1	A,B
		8	8	500-360,000	64,250	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		5	5	5,000-27.5M	9.47M	NR	Waukegan, Illinois	Urban	78	3	5 sites
		NR	NR	NR	ND(500)	Dry	Green Bay, Lake Michigan	Various	NR	4	A
		11	11	3.16-93.3	26.6	Dry	Various U.S. Lakes	Background	--	5	--
81	3,4,4',5-TCB	8	3	ND-90,000	26,880	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		NR	NR	NR	ND(500)	Dry	Green Bay, Lake Michigan	Various	NR	4	A
Pentachloro-PCB (MW=326.44)											
126	3,3',4,4',5-PeCB	18	1	ND-110	6.1	Dry	South Central Finland	Various	88/89	1	A,B
		8	2	ND-10,000	2,380	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		NR	NR	NR	ND(500)	Dry	Green Bay, Lake Michigan	Various	NR	4	A
		11	9	ND-18.6	4.48	Dry	Various U.S. Lakes	Background	--	5	--
105	2,3,3',4,4'-PeCB	10	10	52-120	96.4	Dry	South Central Finland	Various	88/89	1	A,B,C
		8	8	6,000-490,000	85,120	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		38	NR	NR	10,000	Dry	Lake Ontario	Various	81	6	Bottom Sediment
		5	5	102,000-131M	35.14M	NR	Waukegan, Illinois	Urban	78	3	5 Locations

Table B-10. Environmental Levels of PCBs in Sediment (ppt) (continued)

IUPAC number	Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
105	2,3,3',4,4'-PeCB (continued)	NR	NR	NR	5,800	Dry	Green Bay, Lake Michigan	Various	NR	4	A
		11	11	18.3-446.0	123.2	Dry	Various U.S. Lakes	Background	--	5	--
114	2,3,4,4',5-PeCB	8	1	ND-110,000	13,750	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		NR	NR	NR	1,000	Dry	Green Bay, Lake Michigan	Various	NR	4	A
118	2,3',4,4',5-PeCB	8	8	86,000-1.48M	351,620	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		38	NR	NR	15,000	Dry	Lake Ontario	Various	81	6	Bottom Sediment
		NR	NR	NR	11,000	Dry	Green Bay, Lake Michigan	Various	NR	4	A
		2	0	0.01	0.01	Dry	Alicante, Spain	Coastal	89/90	7	
		11	11	53.4-1350	323.2	Dry	Various U.S. Lakes	Background	--	5	--
Hexachloro-PCB (MW=360.88)											
156	2,3,3',4,4',5-HxCB	38	NR	NR	2,100	Dry	Lake Ontario	Various	81	6	Bottom Sediment
		NR	NR	NR	1,700	Dry	Green Bay, Lake Michigan	Various	NR	4	A
		11	11	4.6-203	45.9	Dry	Various U.S. Lakes	Background	--	5	--
157	1,2,3',4,4',5'HxCB	11	11	1.3-53.2	12.2	Dry	Various U.S. Lakes	Background	--	5	--
167	2,3',4,4',5,5'-HxCB	8	2	ND-80,000	15,500	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		NR	NR	NR	ND(500)	Dry	Green Bay, Lake Michigan	Various	NR	4	A

Table B-10. Environmental Levels of PCBs in Sediment (ppt) (continued)

IUPAC number	Chemical	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments[a]
169	3,3',4,4',5,5'-HxCB	18	0	ND(20-50)	NA	Dry	South Central Finland	Various	88/89	1	A,B
		8	3	ND-19,000	4,800	Dry	Eastern Wisconsin	Industrial	88/89	2	A,D
		NR	NR	NR	ND(500)	Dry	Green Bay, Lake Michigan	Various	NR	4	A
		11	10	ND-2.47	0.94	Dry	Various U.S. Lakes	Background	--	5	--
Heptachloro-PCB (MW=396.33)											
189	2,3,3',4,4',5,5'HpCB	NR	NR	NR	ND(500)	Dry	Green Bay, Lake Michigan	Various	NR	4	A

[a] Key: A LOD (Ref. 1)=20 to 50 ppt, LOD (Ref. 6)=1,000 ppt, LOD (Ref. 16)=500 ppt.
B Dry Surface Sediments from 18 lakes.
C All collected samples not analyzed.
D Superfund/Michigan "Area of Concern" Site.

NOTES:

NR = Not Reported
NA = Not Applicable
ND = Not Detected
ppt = Parts per trillion

Sources:

1. Koistinen et al. (1990)
2. Sonzogni et al. (1991)
3. Huckins et al. (1988)
4. Smith et al. (1990)
5. Cleverly et al. (1996)
6. Oliver and Niimi (1988)
7. Prats et al. (1992)

Table B-11. Environmental Levels of Dioxins in Fish (ppt)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
Tetrachlorodibenzo-p-dioxins (MW=321.98)												
2,3,7,8-TCDD	Eel	Liver	6	6	1.2-9.1	3.32	NR	Various, Netherlands	NR	NR	1	one sample near dump site
	Eel	Fillet	5	5	2.4-3.3	3.04	Fat	Rhine River, Germany	NR	88	2	up & downstream Basal
	Trout	Fillet	1	1	1.4	1.4	Fat	Neckar River, Germany	Urban	88	2	composite sample
	Grayling	Fillet	1	1	3.8	3.8	Fat	Neckar River, Germany	Urban	88	2	
	Barbel	Fillet	1	1	5.1	5.1	Fat	Neckar River, Germany	Urban	88	2	
	Carp	Fillet	1	1	2.5	2.5	Fat	Neckar River, Germany	Urban	88	2	
	Chub	Fillet	1	0	ND(2.3)	NA	Fat	Neckar River, Germany	Urban	88	2	composite sample
	Eel	Fillet	5	5	0.9-1.5	1.3	Fat	Neckar River, Germany	Urban	87-88	2	
	Bream		14	14	1.4-94.4	18.0	Fresh	Hamburg, Germany	Urban	84	3	
	Perch		3	3	1.8-8.1	5.9	Fresh	Hamburg, Germany	Urban	84	3	
	Herring	Whole	1	0	ND(0.1)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	0	ND(0.1)	NA	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	0	ND(0.1)	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Salmon	Muscle	2	2	4.6-19.0	11.8	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	wild salmon
	Salmon	Muscle	2	2	0.2-0.3	0.25	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	hatched salmon
	Perch	NR	3	3	2.6-19	11.5	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	caught near pulp mill
	Artic Char	NR	5	5	6.5-25	14.3	Fresh	Lake Vattern, Sweden	NR	NR	4	
	Carp	Whole	3	0	ND(6.6)	NA	NR	Mississippi River, MN	Industrial	NR	5	Elk River power station
	Carp	Whole	3	0	ND(6.6)	NA	NR	Lake Orono, MN	Industrial	NR	5	Elk River power station
	Blue Crab	Meat	2	2	106-116	111	Wet	Passaic River, NJ	Urban	NR	6	
	Lobster	Meat	2	2	4.7-6.3	5.5	Wet	New York Bight	Dump Site	NR	6	former sewage sludge

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDD (continued)	Str. Bass	Fillets	2	2	83.9-734	409	Wet	Newark Bay, NJ	Urban	NR	6	
	Lake Trout	Whole	1	1	1.0	1.0	Wet	Lake Superior	NR	84	7	mean 5 samples
	Lake Trout	Whole	1	1	8.6	8.6	Wet	Lake Huron	NR	84	7	mean 5 samples
	Lake Trout	Whole	3	3	3.5-5.8	4.4	Wet	Lake Michigan	NR	84	7	range 3 sample sites
	Walleye	Whole	1	1	1.8	1.8	Wet	Lake Erie	NR	84	7	mean 5 samples
	Walleye	Whole	1	1	6.6	6.6	Wet	Lake St. Clair	NR	84	7	mean 5 samples
	Lake Trout	Whole	1	1	48.9	48.9	Wet	Lake Ontario	NR	84	7	mean 5 samples
	Lake Trout	Whole	10	10	3.0-8.7	4.2	Wet	Lake Michigan	NR	84	7	
	Br. Trout	Whole	1	1	6	6	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Br. Trout	Fillets	1	1	5	5	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Whole	1	1	14	14	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Fillets	1	1	5	5	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Whole	1	1	18	18	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Fillets	1	1	8	8	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Whole	1	1	20	20	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Cod	Fillets	4	0	ND(1.0)	NA	Fresh	Various, Sweden	Industrial	88	9	
	Haddock	Fillets	1	0	ND(0.2)	NA	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
	P. Flounder	Fillets	1	0	ND(0.2)	NA	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
	Plaice	Fillets	1	0	ND(0.5)	NA	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
	Flounder	Fillets	1	0	ND(0.5)	NA	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDD (continued)	Eel	Fillets	4	1	ND-1.4	0.35	Fresh	Various, Sweden	Industrial	87-88	9	
	Mussel	Muscle	3	0	ND(0.5)	NA	Fresh	Grenlandsfjord,Sweden	Industrial	87	9	
	Shrimp	Muscle	2	0	ND(2.0)	NA	Fresh	Grenlandsfjord,Sweden	Industrial	88	9	
	Cod	Fillets	6	NR	ND-3.8	NR	Fresh	Frierfjord, Sweden	Industrial	87	9	only conc. range given
	Carp	Whole	2	2	3-28	16	NR	Lake Huron	NR	NR	10	samples composite 3-5 fish
	Pike	Muscle	8	8	40-833	186	Fat	Lake Vanern, Sweden	Industrial	88	11	samples composite 2-5 fish
	Pike	Muscle	1	1	78	78	Fat	Hedesunda Bay, Sweden	Industrial	88	11	composite 5 fish
	Various[c]	Mixed[d]	314	220	NR	6.84	Wet	Various, US	Various	86-89	12	samples composite 3-5 fish
	Sucker	Whole	15	6	ND-0.85	0.45	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.74-1.39)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(0.96-1.49)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.17)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(0.99-1.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(1.00)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Carp	Whole	5	2	ND-0.46	0.48	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	not available	Whole	2	0	ND(1.15-2.35)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.27)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.34-0.75)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
2,3,7,8-TCDD (continued)	Rainbow Trout	Fillet	2	2	1.87-2.26	2.06	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Brook Trout	Fillet	1	0	ND(0.58)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(0.99)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	0.31	0.31	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.30)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.10-1.00)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.10-0.11)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.16)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(1.00)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(1.00)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(1.02)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(1.04-1.11)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(1.01)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
2,3,7,8-TCDD (continued)	Winter Flounder	Whole	2	1	ND-1.20	1.02	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Bluefish	Whole	1	1	0.75	0.75	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	White Catfish	Whole	1	1	0.75	0.75	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(0.99)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	7.2-12	8.8	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	4.3-6.4	5.5	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	3.2-4.9	4.1	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	1.3-1.4	1.35	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	1	ND-2	1.53	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	2.5-8.8	5.86	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
	Mullet	Fillet	2	1	ND-10	5.1	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	7.1	NA	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Herring	Fillet	1	1	1.4	1.4	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	4.7	4.7	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	23	23	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Redfish	NR	1	1	2.8	2.8	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Plaice	Whole	3	3	0.13-0.18	0.16	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Mackerel	Whole	1	1	0.07	0.07	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Herring	Whole	1	1	0.19	0.19	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Cod	Whole	1	1	0.05	0.05	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
2,3,7,8-TCDD (continued)	Skate	Whole	1	0	ND(0.16)	NA	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Coley	Whole	1	1	0.06	0.06	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Fish	Whole	1	1	0.09	0.09	Wet	Port Talbot, UK	Urban/ Industrial	88	17	

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Ocean Fish	Mixed	13	NR	NR	2.3	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	3.09	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fish	NR	138	NR	0-246	5.45	Fat	Germany	NR	93-96	19	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	1.2	Fat	Catalonia, Spain	NR	99	20	purchased in supermarkets
	Freshwater Fish	NR	NR	nR	nR	1.89	Fat	Russia	NR	96	21	purchased in supermarkets
TCDDs	Bream	NR	13	13	2.5-102	17.6	Fresh	Hamburg, Germany	Urban	84	3	
	Perch	NR	2	2	9.0-10.5	9.8	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	1	ND-3.9	1.3	NR	Mississippi River, MN	Industrial	NR	5	Elk River power station
	Carp	Whole	3	0	ND(6.6)	NA	NR	Lake Orono, MN	Industrial	NR	5	Elk River power station
	Blue Crab	Meat	2	2	118-150	134	Wet	Passaic River, NJ	Urban	NR	6	
	Lobster	Meat	2	2	6.6-8.3	7.4	Wet	New York Bight	Dump Site	NR	6	former sewage sludge
	Str. Bass	Fillets	2	2	85.4-734	410	Wet	Newark Bay, NJ	Urban	NR	6	
	Br. Trout	Whole	1	1	11	11	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Br. Trout	Fillets	1	1	9	9	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Whole	1	1	29	29	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Fillets	1	1	11	11	NR	Lake Ontario	NR	NR	8	composite 3 samples
TCDDs (continued)	Lake Trout	Whole	1	1	32	32	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Fillets	1	1	12	12	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Whole	1	1	22	22	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Fillets	1	1	9	9	NR	Lake Ontario	NR	NR	8	composite 3 samples

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Oyster	Whole	3	3	120-240	163.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	39-87	59	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	24-62	37.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	16-45	30.5	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	4.2-38	21.1	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	9.5	9.5	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Ocean Fish	Mixed	13	NR	NR	4.06	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	4.44	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
Pentachlorodibenzo-p-dioxins (MW=356.42)												
1,2,3,7,8-PeCDD	Herring	Whole	1	1	0.6	0.6	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	2	1.1-2.8	1.95	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	2	2.0-4.7	3.35	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Carp	Whole	2	2	2-11	6	NR	Lake Huron	NR	NR	10	samples composite 3-5 fish
	Pike	Muscle	8	8	70-250	129	Fat	Lake Vanern, Sweden	Industrial	88	11	samples composite 2-5 fish
	Pike	Muscle	1	1	39	39	Fat	Hedesunda Bay, Sweden	Industrial	88	11	composite 5 fish
	Sucker	Whole	15	2	ND-0.54	0.72	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,7,8-PeCDD (continued)	Lm Bass	Fillet	4	0	ND(0.75-2.18)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(2.74-2.99)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(0.92-0.95)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Redeye Bass	Fillet	1	0	ND(0.92)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Carp	Whole	5	1	ND-0.38	0.80	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	not available	Whole	2	0	ND(1.94-5.33)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.97)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.48-0.70)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(1.11-1.50)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.75)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.62)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(1.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	0.57	0.57	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(1.40)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.37-0.92)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,7,8-PeCDD (continued)	Chain Pickerel	Fillet	3	0	ND(0.19-0.49)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(0.92)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(0.97)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Summer Flounder	Whole	1	0	ND(1.21)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(0.92-0.95)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(0.95)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(1.20-1.24)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(1.61)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(1.01)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(0.92)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	6.3-14	9.77	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	16-26	21.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	10-10	10	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	4.3-4.9	4.6	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	2.6-6.3	4.45	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	8.2-19	14.73	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
1,2,3,7,8-PeCDD	Mullet	Fillet	2	2	0.63-5.6	3.12	Fat	S. Mississippi	NR	94	13	purchased at supermarket
(continued)	Spanish Mackerel	Fillet	1	1	17	17	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Herring	Fillet	1	1	3.5	3.5	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	12	12	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	1.3	1.3	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Redfish	NR	1	1	6.5	6.5	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Plaice	Whole	3	3	0.10-0.38	0.24	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Mackerel	Whole	1	1	0.10	0.10	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Herring	Whole	1	1	0.60	0.60	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Cod	Whole	1	0	ND(0.06)	NA	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Skate	Whole	1	1	0.07	0.07	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Coley	Whole	1	0	ND(0.04)	NA	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Fish	Whole	1	1	0.18	0.18	Wet	Port Talbot, UK	Urban/ Industrial	88	17	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	5.2	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fish	NR	138	NR	0-247	6.2	Fat	Germany	NR	93-96	19	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	0.8	Fat	Catalonia, Spain	NR	96	20	purchased at supermarkets
	Freshwater Fish	NR	NR	NR	NR	3.4	Fat	Russia	NR	96	21	purchased at supermarkets

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
PeCDDs	Bream		13	13	3.2-27.8	12.1	Fresh	Hamburg, Germany	Urban	84	3	
	Perch		2	2	9.8-29.8	19.8	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	3	3.5-4.5	3.9	NR	Mississippi River, MN	Industrial	NR	5	Elk River power station
	Carp	Whole	3	0	ND(6.6)	NA	NR	Lake Orono, MN	Industrial	NR	5	Elk River power station
	Blue Crab	Meat	2	2	17.2-18.0	17.6	Wet	Passaic River, NJ	Urban	NR	6	
	Lobster	Meat	2	2	10.0-11.0	10.5	Wet	New York Bight	Dump Site	NR	6	former sewage sludge
	Str. Bass	Fillets	2	2	5.2-10.6	7.9	Wet	Newark Bay, NJ	Urban	NR	6	
	Br. Trout	Whole	1	1	8	8	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Br. Trout	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Whole	1	1	31	31	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Fillets	1	1	15	15	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Whole	1	1	39	39	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Fillets	1	1	9	9	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Whole	1	1	6	6	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Fillets	1	1	5	5	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Ocean Fish		13	0	ND	NA	Fat	Various U.S. Sites		NR	9	
	Fresh Fish		10	NR	NR	5.2	Fat	Various U.S. Sites		NR	9	
	Various[c]	Mixed[d]	34	34	0.15-2.67	0.77	Wet	Various, US	Background[e]	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	140-350	216.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	440-680	556.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	250-560	390	Fat	S. Mississippi	NR	94	13	purchased at supermarket

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
PeCDDs (continued)	Crawfish	Head	2	2	43-47	45	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	14-31	22.5	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	24	24	Fat	S. Mississippi	NR	94	13	purchased at supermarket
Hexachlorodibenzo-p-dioxins (MW=390.8)												
1,2,3,4,7,8-HxCDD	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	2	0.2-0.3	0.25	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	0	ND(0.2)	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Carp	Whole	2	2	3-5	4	NR	Lake Huron	NR	NR	10	samples composite 3-5 fish
	Pike	Muscle	8	8	6.7-22	12.8	Fat	Lake Vanern, Sweden	Industrial	88	11	samples composite 2-5 fish
	Pike	Muscle	1	1	11	11	Fat	Hedesunda Bay, Sweden	Industrial	88	11	composite 5 fish
	Sucker	Whole	15	2	ND-0.24	0.81	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.90-2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(2.47-2.87)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.25)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Carp	Whole	5	1	ND-0.70	1.08	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	not available	Whole	2	0	ND(1.50-3.31)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,4,7,8-HxCDD (continued)	Brown Trout	Fillet	2	0	ND(0.65-0.72)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Rainbow Trout	Fillet	2	0	ND(0.89-1.04)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(1.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(2.46)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(2.56)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(1.13)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.60-2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.22-1.04)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.22)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(2.46)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,4,7,8-HxCDD (continued)	Winter Flounder	Whole	2	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Bluefish	Whole	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(2.47)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	100	NR	1.67	Wet	Various, US	Various	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	4.2-14	7.87	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	16-26	22.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	7.2-7.5	7.37	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	3-4.1	3.55	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	1	ND-3.6	2.55	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	7.9-19	15.3	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
	Mullet	Fillet	2	0	ND-(0.26-1.25)	0.76	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	9.0	9.0	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Herring	Fillet	1	1	0.47	0.47	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	1.2	1.2	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	0.01	0.01	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Redfish	NR	1	1	0.5	0.5	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Fish	Whole	1	1	0.14	0.14	Wet	Port Talbot, UK	Urban/ Industrial	88	17	
	Fish	Whole	1	1	0.06	0.06	Wet	Stonehaven, UK	Rural	91	17	
1,2,3,4,7,8-HxCDD	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
(continued)	Fresh Fish	Mixed	10	NR	NR	3.01	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Fish	NR	138	NR	0-19.5	0.80	Fat	Germany	NR	93-96	19	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	0.40	Fat	Catalonia, Spain	NR	96	20	purchased at supermarkets
	Freshwater Fish	NR	NR	NR	NR	5.71	Fat	Russia	NR	96	21	purchased at supermarkets
1,2,3,6,7,8-HxCDD	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	1	ND-2.4	1.25	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	2	2.2-8.1	5.15	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Pike	Muscle	8	8	30-100	50.5	Fat	Lake Vanern, Sweden	Industrial	88	11	samples composite 2-5 fish
	Pike	Muscle	1	1	22	22	Fat	Hedesunda Bay, Sweden	Industrial	88	11	composite 5 fish
	Sucker	Whole	15	4	ND-0.46	0.97	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.90-2.40)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(2.87-3.71)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(3.49)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(1.84-1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Carp	Whole	5	3	ND-3.57	1.63	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	not available	Whole	2	0	ND(2.25-5.00)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,6,7,8-HxCDD (continued)	Brown Trout	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Brown Trout	Fillet	2	0	ND(0.65-0.72)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(1.74-1.78)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(1.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(1.84)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	1.36	1.36	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(1.13)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.60-1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.87-1.04)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.22)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Summer Flounder	Whole	1	1	0.67	0.67	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(1.84)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,6,7,8-HxCDD (continued)	Composite Bottom	Whole	1	0	ND(1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Winter Flounder	Whole	2	1	ND-0.40	0.67	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(1.84)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	White Catfish	Whole	1	1	0.68	0.68	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(1.85)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	217	NR	4.29	Wet	Various, US	Various	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	9.6-31	17.53	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	26-40	34.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	13-15	14	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	5.9-9.3	7.6	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	1	ND-5.4	3.43	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	11-26	20.33	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
	Mullett	Fillet	2	0	ND(0.026-1.25)	0.75	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	47	47	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Herring	Fillet	1	1	1.8	1.8	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	5.8	5.8	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	17	17	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Redfish	NR	1	1	8.4	8.4	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Ocean Fish	Mixed	13	ND	ND	NA	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
1,2,3,6,7,8-HxCDD	Fresh Fish	Mixed	10	NR	NR	5.31	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
(continued)	Fish	NR	138	NR	0-101	3.8	Fat	Germany	NR	93-96	19	official food inspection samples

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Fish & Seafood	NR	8	NR	NR	1.5	Fat	Catalonia, Spain	NR	96	20	purchased at supermarkets
	Freshwater Fish	NR	NR	NR	NR	4.3	Fat	Russia	NR	96	21	purchased at supermarkets
1,2,3,7,8,9-HxCDD	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	0	ND(0.2)	NA	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	0	ND(0.2)	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Pike	Muscle	8	0	ND(3-11)	NA	Fat	Lake Vanern, Sweden	Industrial	88	11	samples composite 2-5 fish
	Pike	Muscle	1	0	ND(6)	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	11	composite 5 fish
	Sucker	Whole	15	0	ND(0.60-3.37)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.90-2.40)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(2.47-2.87)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.25)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Carp	Whole	5	0	ND(1.15-2.69)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	not available	Whole	2	0	ND(1.50-2.48)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,7,8,9-HxCDD (continued)	Brown Trout	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.65-0.72)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Rainbow Trout	Fillet	2	0	ND(0.89-1.04)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(1.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(1.37)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(1.13)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.60-1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.22-1.04)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.22)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Summer Flounder	Whole	1	1	0.34	0.34	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(1.37-1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,7,8,9-HxCDD (continued)	Composite Bottom	Whole	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Bluefish	Whole	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(1.38)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	119	NR	1.15	Wet	Various, US	Various	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	8.2-20	12.6	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	30-40	34.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	16-19	17.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	6-8.1	7.05	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	1	ND-10	5.6	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	5-20	14	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
	Mullett	Fillet	2	0	ND(0.21-1.00)	0.6	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	13	13	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Herring	Fillet	1	1	0.25	0.25	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	1.0	1.0	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	5.2	5.2	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Redfish	NR	1	1	1.3	1.3	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
1,2,3,7,8,9-HxCDD	Plaice	Whole	3	3	0.02-0.05	0.04	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
(continued)	Mackerel	Whole	1	1	0.02	0.02	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Herring	Whole	1	1	0.07	0.07	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Cod	Whole	1	0	ND(0.02)	NA	Wet	Norwich, UK	NR	88	16	purchased at retail outlet

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Skate	Whole	1	1	0.04	0.04	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Coley	Whole	1	0	ND(0.04)	NA	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Fish	Whole	1	1	0.04	0.04	Wet	Port Talbot, UK	Urban/ Industrial	88	17	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	4.11	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fish	NR	138	NR	0-24	1.1	Fat	Germany	NR	93-96	19	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	1.2	Fat	Catalonia, Spain	NR	96	20	purchased at supermarkets
	Freshwater Fish	NR	NR	NR	NR	4.3	Fat	Russia	NR	96	21	purchased at supermarkets
HxCDDs	Bream		13	13	4.3-46.4	17.8	Fresh	Hamburg, Germany	Urban	84	3	
	Perch		2	2	18.6-21.5	20.0	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	3	2.3-11	6.9	NR	Mississippi River, MN	Industrial	NR	5	Elk River power station
	Carp	Whole	3	1	ND-3.0	1.0	NR	Lake Orono, MN	Industrial	NR	5	Elk River power station
	Blue Crab	Meat	2	2	0.3-1.5	0.9	Wet	Passaic River, NJ	Urban	NR	6	
	Lobster	Meat	2	2	3.0-3.4	3.2	Wet	New York Bight	Dump Site	NR	6	former sewage sludge
	Str. Bass	Fillets	2	2	0.6-0.7	0.65	Wet	Newark Bay, NJ	Urban	NR	6	
HxCDDs (continued)	Br. Trout	Whole	1	1	20	20	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Br. Trout	Fillets	1	1	25	25	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Whole	1	1	67	67	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Fillets	1	1	37	37	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Whole	1	1	114	114	NR	Lake Ontario	NR	NR	8	composite 3 samples

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Lake Trout	Fillets	1	1	27	27	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Whole	1	1	16	16	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Fillets	1	1	22	22	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Oyster	Whole	3	3	230-630	383.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	1500-2400	1966.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	790-950	880	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	120-140	130	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	44-100	72	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	77	77	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	12.5	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
Heptachlorodibenzo-p-dioxins (MW=425.31)												
1,2,3,4,6,7,8-HpCDD	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	1	ND-0.6	0.35	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	0	ND(0.2)	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Carp	Whole	2	2	3-4	3.5	NR	Lake Huron	NR	NR	10	samples composite 3-5 fish
1,2,3,4,6,7,8-HpCDD	Sucker	Whole	15	8	ND-8.16	2.59	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
(continued)	Lm Bass	Fillet	4	1	ND-0.75	1.54	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(12.94-19.27)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(10.70)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Sm Bass	Fillet	2	1	ND-0.23	0.11	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(1.26)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Carp	Whole	5	3	ND-7.14	7.18	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	not available	Whole	1	0	ND(6.96)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(4.91)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(1.31-4.45)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	2	1.67-2.21	1.94	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Brook Trout	Fillet	1	1	1.80	1.80	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(3.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(4.43)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	3.23	3.23	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(7.36)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Walleye	Fillet	2	0	ND(0.75-0.86)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
1,2,3,4,6,7,8-HpCDD (continued)	Chain Pickerel	Fillet	3	0	ND(3.08-5.09)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(2.29)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Sea Catfish	Fillet	1	1	0.51	0.51	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	North Hogsucker	Whole	1	1	0.74	0.74	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Summer Flounder	Whole	1	1	3.06	3.06	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Dolly Varden	Whole	2	2	0.77-0.79	0.78	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Composite Bottom	Whole	1	1	2.18	2.18	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Winter Flounder	Whole	2	2	0.61-0.80	0.71	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(4.10)	NA	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	White Catfish	Whole	1	1	0.89	0.89	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Crayfish	Whole	1	1	0.49	0.49	Wet	Various, US	Background	86-89	12	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	279	NR	10.5	Wet	Various, US	Various	86-89	12	samples composite 3-5 fish
	Oyster	Whole	3	3	27-90	48.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	110-140	126.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	64-70	67.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	22-29	25.5	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	19-33	26	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	53-170	121	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
1,2,3,4,6,7,8-HpCDD	Mullett	Fillet	2	2	1.2-7.2	4.2	Fat	S. Mississippi	NR	94	13	purchased at supermarket
(continued)	Spanish Mackerel	Fillet	1	1	52	52	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Herring	Fillet	1	1	0.45	0.45	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	3.6	3.6	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	10	10	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Redfish	NR	1	1	3.0	3.0	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Plaice	Whole	3	3	0.13-0.34	0.22	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Mackerel	Whole	1	1	0.48	0.48	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Herring	Whole	1	1	0.47	0.47	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Cod	Whole	1	0	ND(0.44)	NA	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Skate	Whole	1	1	0.26	0.26	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Coley	Whole	1	1	0.21	0.21	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Fish	Whole	1	1	0.52	0.52	Wet	Port Talbot, UK	Urban/ Industrial	88	17	
	Fish	Whole	1	1	0.28	0.28	Wet	Stonehaven, UK	Rural	91	17	
	Ocean Fish	Mixed	13	NR	NR	11.7	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	23.5	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fish	NR	138	NR	0.33-64	4.1	Fat	Germany	NR	93-96	19	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	96.2	Fat	Catalonia, Spain	NR	96	20	purchased at supermarkets
	Freshwater Fish	NR	NR	NR	NR	3.1	Fat	Russia	NR	96	21	purchased at supermarkets
HpCDDs	Bream		13	13	1.5-14.4	6.7	Fresh	Hamburg, Germany	Urban	84	3	
	Perch		2	2	3.5-7.1	5.3	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	3	15-22	19.3	NR	Mississippi River, MN	Industrial	NR	5	Elk River power station
	Carp	Whole	3	2	ND-11	7.0	NR	Lake Orono, MN	Industrial	NR	5	Elk River power station
	Blue Crab	Meat	2	0	ND(1.1)	NA	Wet	Passaic River, NJ	Urban	NR	6	
	Lobster	Meat	2	1	ND-8.5	4.25	Wet	New York Bight	Dump Site	NR	6	former sewage sludge

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Str. Bass	Fillets	2	2	4.0-11.4	7.7	Wet	Newark Bay, NJ	Urban	NR	6	
	Br. Trout	Whole	1	1	7	7	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Br. Trout	Fillets	1	1	9	9	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Whole	1	1	12	12	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Whole	1	1	16	16	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Whole	1	1	30	30	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Fillets	1	1	50	50	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Oyster	Whole	3	3	84-290	156.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	380-500	456.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	260-290	273.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	85-120	102.5	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	70-130	100	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	54	54	Fat	S. Mississippi	NR	94	13	purchased at supermarket
HpCDDs (continued)	Ocean Fish	Mixed	13	NR	NR	11.7	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	23.5	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
Octachlorodibenzo-p-dioxin (MW=460.76)												
1,2,3,4,6,7,8,9-OCDD	Eel	Fillet	5	5	28-60	44.4	Fat	Rhine River, Germany	NR	88	2	up & downstream Basal
	Trout	Fillet	1	0	ND(5.0)	NA	Fat	Neckar River, Germany	Urban	88	2	composite sample
	Grayling	Fillet	1	1	47	47	Fat	Neckar River, Germany	Urban	88	2	

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Barbel	Fillet	1	1	9.0	9	Fat	Neckar River, Germany	Urban	88	2	
	Carp	Fillet	1	1	23	23	Fat	Neckar River, Germany	Urban	88	2	
	Chub	Fillet	1	1	15	15	Fat	Neckar River, Germany	Urban	88	2	composite sample
	Eel	Fillet	5	5	25-40	30	Fat	Neckar River, Germany	Urban	87-88	2	
	Bream		14	14	1.4-5.1	2.5	Fresh	Hamburg, Germany	Urban	84	3	
	Perch		3	3	2.3-10.5	5.2	Fresh	Hamburg, Germany	Urban	84	3	
	Herring	Whole	1	1	1.1	1.1	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 5-10 fish
	Herring	Whole	2	1	ND-0.7	0.4	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 5-10 fish
	Herring	Whole	2	1	ND-0.3	0.2	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 5-10 fish
	Salmon	Muscle	2	1	ND-1.5	0.75	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	wild salmon
	Salmon	Muscle	2	2	0.8-1.9	1.35	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	hatched salmon
	Perch	NR	3	3	0.6-0.8	0.73	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	caught near pulp mill
	Carp	Whole	3	3	56-62	59	NR	Mississippi River, MN	Industrial	NR	5	Elk River power station
	Carp	Whole	3	3	35-43	39	NR	Lake Orono, MN	Industrial	NR	5	Elk River power station
	Blue Crab	Meat	2	2	34.3-78.8	56.6	Wet	Passaic River, NJ	Urban	NR	7	
1,2,3,4,6,7,8,9-OCDD	Lobster	Meat	2	2	6.3-10.9	8.6	Wet	New York Bight	Dump Site	NR	6	former sewage sludge
(continued)	Str. Bass	Fillets	2	2	5.1-49.5	27.3	Wet	Newark Bay, NJ	Urban	NR	6	
	Lake Trout	Whole	1	1	1.0	1.0	Wet	Lake Superior	NR	84	7	mean 5 samples
	Lake Trout	Whole	1	1	0.7	0.7	Wet	Lake Huron	NR	84	7	mean 5 samples
	Lake Trout	Whole	3	3	1.1-2.5	1.8	Wet	Lake Michigan	NR	84	7	range 3 sample sites
	Walleye	Whole	1	1	2.8	2.8	Wet	Lake Erie	NR	84	7	mean 5 samples
	Walleye	Whole	1	1	1.8	1.8	Wet	Lake St. Clair	NR	84	7	mean 5 samples

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Lake Trout	Whole	1	1	1.2	1.2	Wet	Lake Ontario	NR	84	7	mean 5 samples
	Lake Trout	Whole	10	10	0.8-3.7	1.6	Wet	Lake Michigan	NR	84	7	
	Br. Trout	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Br. Trout	Fillets	1	1	11	11	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Rb. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Whole	1	1	89	89	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Lake Trout	Fillets	1	1	28	28	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Whole	1	1	160	160	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Coho Salmon	Fillets	1	1	280	280	NR	Lake Ontario	NR	NR	8	composite 3 samples
	Cod	Fillets	4	3	ND-11	4.95	Fresh	Various, Sweden	Industrial	88	9	
	Haddock	Fillets	1	0	ND(3.6)	NA	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
	P. Flounder	Fillets	1	1	3.4	3.4	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
	Plaice	Fillets	1	1	424	424	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
1,2,3,4,6,7,8,9-OCDD	Flounder	Fillets	1	1	2.4	2.4	Fresh	Various, Sweden	Industrial	88	9	composite 10 samples
(continued)	Eel	Fillets	4	3	ND-770	204	Fresh	Various, Sweden	Industrial	87-88	9	
	Mussel	Muscle	3	3	12-140	62.0	Fresh	Grenlandsfjord,Sweden	Industrial	87	9	
	Shrimp	Muscle	2	1	ND-18	9.0	Fresh	Grenlandsfjord,Sweden	Industrial	88	9	
	Cod	Fillets	6	NR	0.63-2.2	NR	Fresh	Frierfjord, Sweden	Industrial	87	9	only conc. range given
	Carp	Whole	2	2	3-5	4	NR	Lake Huron	NR	NR	10	samples composite 3-5 fish
	Pike	Muscle	8	8	10-17	14.75	Fat	Lake Vanern, Sweden	Industrial	88	11	samples composite 2-5 fish

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Pike	Muscle	1	1	22	22	Fat	Hedesunda Bay, Sweden	Industrial	88	11	composite 5 fish
	Herring	Fillet	1	1	0.34	0.34	Fresh	Baltic Sea, Sweden	NR	88	14	sample composite 12 fillets
	Herring	NR	1	1	19	19	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Cod	NR	1	1	83	83	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Redfish	NR	1	1	11	11	Fat	Berlin, W. Germany	Urban	NR	15	purchased at different shops
	Plaice	Whole	3	3	1.40-3.20	2.12	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Mackerel	Whole	1	1	4.81	4.81	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Herring	Whole	1	1	3.4	3.4	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Cod	Whole	1	1	2.79	2.79	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Skate	Whole	1	1	1.36	1.36	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Coley	Whole	1	1	2.25	2.25	Wet	Norwich, UK	NR	88	16	purchased at retail outlet
	Fish	Whole	1	1	4.0	4.0	Wet	Port Talbot, UK	Urban/ Industrial	88	17	
	Fish	Whole	1	1	1.6	1.6	Wet	Stonehaven, UK	Rural	91	17	
	Ocean Fish	Mixed	13	NR	NR	31.6	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
1,2,3,4,6,7,8,9-OCDD	Fresh Fish	Mixed	10	NR	NR	122	Fat	Various U.S. Sites	Urban	NR	18	purchased at supermarket
(continued)	Oyster	Whole	3	3	250-1100	536.67	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Body	3	3	240-470	320	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Blue Crab	Claw	3	3	250-400	303.33	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Head	2	2	66-80	73	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Crawfish	Tail	2	2	210-240	225	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Catfish	Fillet	3	3	400-1100	800	Fat	S. Mississippi	Farm raised	94	13	purchased at supermarket
	Mullett	Fillet	2	2	8.7-32	20.35	Fat	S. Mississippi	NR	94	13	purchased at supermarket

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Spanish Mackerel	Fillet	1	1	76	76	Fat	S. Mississippi	NR	94	13	purchased at supermarket
	Fish	NR	138	NR	2-426	20.5	Fat	Germany	NR	93-96	19	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	126.9	Fat	Catalonia, Spain	NR	96	20	purchased at supermarkets
	Freshwater Fish	NR	NR	NR	NR	5.94	Fat	Russia	NR	96	21	purchased at supermarkets

Footnote References

[a] Ch. = Channel; Y. = Yellow; Sm. M. = Small Mouth; Str. = Striped; Br. = Brown; Rb. = Rainbow; P. = Pole.

[b] Various, Netherlands = samples taken from six locations around Ijsselmeer Lake; Various, Michigan = samples taken from Tittabawassee River, Grand River, Saginaw River, Saginaw Bay, and Lake Michigan; Various, Sweden = samples taken from Grenlandsfjord and Frierfjord; Various US = samples taken from 314 sites across the US, including industrial and background sites.

[c] Species were taken from both bottom feeders and open water feeders, and then composited.

[d] Whole fish samples and fillet samples were combined during analysis.

Table B-11. Environmental Levels of Dioxins in Fish (ppt) (continued)

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects;
NA = not applicable;
ND = non-detected (limit of detection);
NR = not reported;
Descriptions provided were those given by reference or surmised from study description when not given;
One half the detection limit was used in calculating means. Therefore, it is possible to have mean concentrations greater than the range (e.g., reported detection limit for nondetects greater than the positive sample).

Sources:
1. Van den Berg (1987)
2. Frommberger (1991)
3. Gotz and Schumacher (1990)
4. Rappe et al. (1989b)
5. Reed et al. (1990)
6. Rappe et al. (1991)
7. DeVault et al. (1989)
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10. Stalling et al. (1983)
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13. Fiedler et al. (1997)
14. DeWit et al. (1990)
15. Beck et al. (1989)
16. Startin et al. (1990)
17. MAFF (1992)
18. Schecter et al. (1996)
19. Malisch (1998)
20. Domingo et al. (1999)
21. Amirova et al. (1997)

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
Tetrachlorodibenzofurans (MW=305.98)												
2,3,7,8-TCDF	Eel	Liver	6	0	ND	NA	NR	Various, Netherlands	NR	NR	1	one sample near dump site
	Eel	Fillets	5	5	2.1-12	6.98	Fat	Rhine River, Germany	NR	88	2	up & downstream Basal
	Br. Trout	Fillets	1	1	45	45	Fat	Neckar River, Germany	Urban	88	2	composite sample
	Grayling	Fillets	1	1	108	108	Fat	Neckar River, Germany	Urban	88	2	
	Barbel	Fillets	1	1	57	57	Fat	Neckar River, Germany	Urban	88	2	
	Carp	Fillets	1	1	58	58	Fat	Neckar River, Germany	Urban	88	2	
	Chub	Fillets	1	1	128	128	Fat	Neckar River, Germany	Urban	88	2	composite sample
	Eel	Fillets	5	5	0.9-2.0	1.35	Fat	Neckar River, Germany	Urban	87-88	2	
	Herring	Whole	1	1	1.7	1.7	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	2	5.3-5.5	5.4	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
	Herring	Whole	2	2	3.0-6.2	4.6	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Salmon	Muscle	2	2	28-35	31.5	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	wild salmon
	Salmon	Muscle	2	2	7.8-9.0	8.4	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	hatched salmon
	Perch	NR	3	3	2.1-8.7	5.4	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	caught near pulp mill
	Artic Char	NR	5	5	21-75	55	Fresh	Lake Vattern, Sweden	NR	NR	4	
	Carp	Whole	3	3	1.8-3.0	2.6	NR	Mississippi River, MN	Industrial	NR	5	Elk river power station
	Carp	Whole	3	3	1.0-1.3	1.1	NR	Lake Orono, MN	Industrial	NR	5	Elk river power station
	Carp	Fillets	1	1	49	49	NR	NR	NR	78	6	contamimated site
	Catfish	Fillets	1	1	6	6	NR	Saginaw River	NR	84	6	contaminated site

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDF (continued)	Smk. Chub	Fillets	1	1	3	3	NR	NR	NR	85	6	contaminated site
	Str. Bass	Fillets	5	5	7-93	28.0	NR	Hudson River	NR	85	6	contaminated site
	Lg. M. Bass	Fillets	1	1	10	10	NR	Hudson River	NR	85	6	contaminated site
	Lake Trout	Fillets	3	3	11-56	31.7	NR	Lake Superior	NR	85	6	contaminted site
	Blue Crab	Meat	2	2	11.0-15.5	13.2	Wet	Passaic River, NJ	Urban	NR	7	
	Lobster	Meat	2	2	3.5-4.1	3.8	Wet	New York Bight	Dump Site	NR	7	former sewage sludge
	Str. Bass	Fillets	2	2	51.9-85.5	68.7	Wet	Newark Bay, NJ	Urban	NR	7	
	Lake Trout	Whole	1	1	14.8	14.8	Wet	Lake Superior	NR	84	8	mean 5 samples
	Lake Trout	Whole	1	1	22.8	22.8	Wet	Lake Huron	NR	84	8	mean 5 samples
	Lake Trout	Whole	3	3	34.8-42.3	39.5	Wet	Lake Michigan	NR	84	8	range 3 sample sites
	Walleye	Whole	1	1	11.3	11.3	Wet	Lake Erie	NR	84	8	mean 5 samples
	Walleye	Whole	1	1	24.8	24.8	Wet	Lake St. Clair	NR	84	8	mean 5 samples
	Lake Trout	Whole	1	1	18.5	18.5	Wet	Lake Ontario	NR	84	8	mean 5 samples
	Lake Trout	Whole	10	10	27.0-56.0	38.4	Wet	Lake Michigan	NR	84	8	
	Br. Trout	Whole	1	1	11	11	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Br. Trout	Fillets	1	1	8	8	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Whole	1	1	19	19	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Whole	1	1	15	15	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Whole	1	1	20	20	NR	Lake Ontario	NR	NR	9	composite 3 samples

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDF (continued)	Coho Salmon	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Cod	Fillets	4	4	0.2-1.4	0.62	Fresh	Various, Sweden	Industrial	88	10	
	Haddock	Fillets	1	1	0.75	0.75	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	P. Flounder	Fillets	1	1	0.28	0.28	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	Plaice	Fillets	1	1	1.4	1.4	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	Flounder	Fillets	1	1	1.2	1.2	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	Eel	Fillets	4	3	ND-68	17.1	Fresh	Various, Sweden	Industrial	88	10	
	Mussel	Muscle	3	3	16.1-61	32.4	Fresh	Grenlandsfjord,Sweden	Industrial	87	10	
	Shrimp	Muscle	2	2	6.1-37	21.6	Fresh	Grenlandsfjord,Sweden	Industrial	88	10	
	Cod	Fillets	6	NR	0.49-14.3	NR	Fresh	Frierfjord, Sweden	Industrial	87	10	only conc. range given
	Carp	Whole	2	2	11	NA	NR	Lake Huron	NR	NR	11	samples composite 3-5 fish
	Pike	Muscle	8	8	330-3000	774	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	1	430	430	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Various[c]	Mixed[d]	314	279	NR	13.6	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Sucker	Whole	15	12	ND-6.21	1.96	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.23-0.59)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	1	ND-0.86	1.24	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.95)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	2	0.19-0.30	0.25	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(0.49)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDF (continued)	Carp	Whole	5	4	ND-1.36	0.96	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	1	ND-0.29	0.37	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	2	0.75-0.90	0.83	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(0.48)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	1	2.30	2.30	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	1.77	1.77	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.41)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	1	ND-0.86	0.41	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.20-0.24)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(0.49)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(0.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(0.71)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDF (continued)	Dolly Varden	Whole	2	2	0.37	0.37	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	1	0.86	0.86	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	2	13.30-13.73	13.52	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	1	1.93	1.93	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	1	1.14	1.14	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(0.57)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	3	14-48	29.67	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	26-51	34.67	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	9.8-15	13.6	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	5.1-5.4	5.25	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	2.8-9.5	6.15	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	3	0.64-0.99	0.84	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	2	1.1-7.8	4.45	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	11	NA	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	1	7.6	7.6	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Herring	NR	1	1	57	57	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	98	98	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	78	78	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.90-1.86	1.32	Wet	Norwich, UK	NR	88	17	purchased at retail outlet

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,7,8-TCDF (continued)	Mackeral	Whole	1	1	2.61	2.61	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	2.47	2.47	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	1	0.22	0.22	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Skate	Whole	1	1	0.31	0.31	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	1	0.14	0.14	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.6	0.6	Wet	Port Talbot, UK	Urban/ Industrial	1988	18	
	Fish	Whole	1	1	0.29	0.29	Wet	Stonehaven, UK	Rural	1991	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	14.4	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0.18-42.81	66.5	Fat	Germany	NR	93-96	20	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	11.1	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	9.98	Fat	Russia	NR	96	22	purchased in supermarkets
TCDFs	Bream	NR	13	13	7.8-86.5	44.3	Fresh	Hamburg, Germany	Urban	84	3	
	Perch	NR	2	2	10.7-41.1	25.9	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	3	2.4-4.0	3.1	NR	Mississippi River, MN	Industrial	NR	5	Elk river power station
	Carp	Whole	3	3	1.0-1.3	1.2	NR	Lake Orono, MN	Industrial	NR	5	Elk river power station
	Blue Crab	Meat	2	2	133-164	149	Wet	Passaic River, NJ	Urban	NR	7	
	Lobster	Meat	2	2	23.0-31.2	27.1	Wet	New York Bight	Dump Site	NR	7	former sewage sludge
	Str. Bass	Fillets	2	2	77.2-108	92.4	Wet	Newark Bay, NJ	Urban	NR	7	
TCDFs (continued)	Br. Trout	Whole	1	1	11	11	NR	Lake Ontario	NR	NR	9	composite 3 samples

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Br. Trout	Fillets	1	1	8	8	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Whole	1	1	19	19	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Whole	1	1	18	18	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Whole	1	1	20	20	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Fillets	1	1	6	6	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Oyster	Whole	3	3	96-170	122	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	69-82	74.67	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	49-96	66	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	47-93	70	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	34-120	78.50	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	15	15	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Ocean Fish	Mixed	13	NR	NR	17.8	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	40.4	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
TCDFs other than 2,3,7,8-TCDF	Eel	Fillets	5	5	4.6-13	8.8	Fat	Rhine River, Germany	NR	88	2	up & downstream Basal
	Grayling	Fillets	1	1	142	142	Fat	Neckar River, Germany	Urban	88	2	
	Barbel	Fillets	1	1	77	77	Fat	Neckar River, Germany	Urban	88	2	
	Carp	Fillets	1	1	14	14	Fat	Neckar River, Germany	Urban	88	2	
	Chub	Fillets	1	1	17	17	Fat	Neckar River, Germany	Urban	88	2	sample composite 5 chubs
	Eel	Fillets	1	1	1.5	1.5	Fat	Neckar River, Germany	Urban	88	2	sample composite 2 eels

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
Pentachlorodibenzofurans (MW=340.42)												
1,2,3,7,8-PeCDF	Herring	Whole	1	1	0.4	0.4	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	2	1.4-2.5	1.95	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
	Herring	Whole	2	2	0.8-0.9	0.85	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Carp	Whole	2	2	1-5	3	NR	Lake Huron	NR	NR	11	samples composite 3-5 fish
	Pike	Muscle	8	8	43-140	73.2	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	1	39	39	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Various[c]	Mixed[d]	314	151	NR	1.71	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Sucker	Whole	15	1	ND-0.62	0.33	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.33-0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(0.76-0.82)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(0.59)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	1	ND-0.33	0.16	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	5	0	ND(0.56-0.80)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	1	ND-0.92	0.69	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.36)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.20-0.35)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,7,8-PeCDF (continued)	Rainbow Trout	Fillet	2	1	ND-0.47	0.51	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(0.90)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.25)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(0.77)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.20-0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.19-0.28)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(0.77)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(0.77)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	2	1.74-1.90	1.82	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,7,8-PeCDF	Bluefish	Whole	1	1	1.06	1.06	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
(continued)	White Catfish	Whole	1	1	0.73	0.73	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	34	34	0.1-1.90	0.43	Wet	Various, US	Background[e]	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	3	1.2-1.4	1.3	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	1.3-2.9	2.03	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	0.69-1.6	1.2	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	1.2-2	1.6	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	1.6-3.2	2.4	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	3	0.11-0.21	0.15	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	2	0.52-1.3	0.91	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	3.5	3.5	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	1	4.2	4.2	Fresh	Baltic Sea, Sweden		88	15	sample composite 12 fillets
	Herring	NR	1	1	16	16	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	48	48	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	31	31	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.14-0.23	0.18	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	1	0.08	0.08	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	0.47	0.47	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	1	0.05	0.05	Wet	Norwich, UK	NR	88	17	purchased at retail outlet

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,7,8-PeCDF	Skate	Whole	1	1	0.07	0.07	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
(continued)	Coley	Whole	1	1	0.07	0.07	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	8	NR	0.05-0.47	0.16	Wet	Norwich, UK	NR	88	18	
	Fish	Whole	1	1	0.08	0.08	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0-268	7.3	Fat	Germany	NR	93-96	20	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	3.7	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	2.46	Fat	Russia	NR	96	22	purchased in supermarkets
2,3,4,7,8-PeCDF	Herring	Whole	1	1	3.0	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	2	6.8-19.0	12.9	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
	Herring	Whole	2	2	8.8-8.9	8.85	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Carp	Whole	2	2	4-11	7.5	NR	Lake Huron	NR	NR	11	samples composite 3-5 fish
	Pike	Muscle	8	8	120-290	189	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	1	110	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	6	ND-1.36	0.46	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.33-0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(0.76-0.82)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
2,3,4,7,8-PeCDF	Rock Bass	Fillet	1	0	ND(0.59)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
(continued)	Sm Bass	Fillet	2	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	5	2	ND-0.34	0.35	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	1	ND-1.33	0.82	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.36)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.20-0.35)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	2	0.70	0.70	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(0.90)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.25)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(0.95)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(0.92)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.20-0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.19-0.28)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
2,3,4,7,8-PeCDF (continued)	Summer Flounder	Whole	1	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	2	0.64-0.70	0.67	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	1	0.93	0.93	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	1	1.39	1.39	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(0.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	201	NR	3.06	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	3	4.3-5.8	5.2	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	7-9	8.17	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	2.8-5.9	4.27	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	1.4-2.3	1.85	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	2.1-2.4	2.25	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	3	0.26-0.31	0.28	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	2	0.62-4.6	2.61	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	5.1	5.1	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	1	17.0	17.0	Fresh	Baltic Sea, Sweden		88	15	sample composite 12 fillets
	Herring	NR	1	1	29	29	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	3.1	3.1	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
2,3,4,7,8-PeCDF	Redfish	NR	1	1	25	25	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
(continued)	Plaice	Whole	3	3	0.39-1.58	0.95	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	1	0.37	0.37	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	1.96	1.96	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	1	0.03	0.03	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Skate	Whole	1	0	ND(0.04)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	1	0.04	0.04	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.68	0.68	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Fish	Whole	1	1	0.07	0.07	Wet	Stonehaven, UK	Rural	88-91	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	7.56	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0.12-669	14.4	Fat	Germany	NR	93-96	20	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	4.4	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	3.77	Fat	Russia	NR	96	22	purchased in supermarkets
PeCDFs	Bream	NR	13	13	13.9-114	65.4	Fresh	Hamburg, Germany	Urban	84	3	
	Perch	NR	2	2	62.3-153	108	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	3	15-45	26.3	NR	Mississippi River, MN	Industrial	NR	5	Elk river power station
	Carp	Whole	3	2	ND-13	9.0	NR	Lake Orono, MN	Industrial	NR	5	Elk river power station
	Blue Crab	Meat	2	2	89.7-94.1	91.9	Wet	Passaic River, NJ	Urban	NR	7	
PeCDFs (continued)	Lobster	Meat	2	2	29.8-37.3	33.6	Wet	New York Bight	Dump Site	NR	7	former sewage sludge
	Str. Bass	Fillets	2	2	34.3-82.6	58.4	Wet	Newark Bay, NJ	Urban	NR	7	

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Br. Trout	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Br. Trout	Fillets	1	1	3	3	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Whole	1	1	8	8	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Fillets	1	1	7	7	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Whole	1	1	39	39	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Fillets	1	1	8	8	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Whole	1	1	13	13	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Oyster	Whole	3	3	56-66	59.67	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	110-200	146.67	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	43-110	71.33	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	29-54	41.50	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	20-39	29.5	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	15	15	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Ocean Fish	Mixed	13	NR	NR	8.75	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	NR	NR	21.7	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
PeCDFs other than 1,2,3,7,8-PeCDF and 2,3,4,7,8-PeCDF	Grayling	Fillets	1	1	22	22	Fat	Neckar River, Germany	Urban	88	2	
	Barbel	Fillets	1	1	21	21	Fat	Neckar River, Germany	Urban	88	2	
	Carp	Fillets	1	1	17	17	Fat	Neckar River, Germany	Urban	88	2	
Hexachlorodibenzofurans (MW=374.87)												
1,2,3,4,7,8-HxCDF	Herring	Whole	1	1	0.2	0.2	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	2	0.4-0.7	0.55	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Herring	Whole	2	2	0.3	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Carp	Whole	2	2	2-5	3.5	NR	Lake Huron	NR	NR	11	samples composite 3-5 fish
	Pike	Muscle	8	8	10-33	14.4	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	1	11	11	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	0	ND(0.33-2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.41-2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(1.13-1.30)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(0.72)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(2.83-2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	5	1	ND-0.40	0.98	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	1	ND-1.24	0.81	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.23-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(0.45-0.58)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
1,2,3,4,7,8-HxCDF	Brook Trout	Fillet	1	0	ND(1.46)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
(continued)	Gray Redhorse	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(2.82)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Golden Redhorse	Whole	1	1	1.18	1.18	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.21-2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.20-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(2.83)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(2.83)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(2.83-2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(2.83)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
1,2,3,4,7,8-HxCDF	Various[c]	Mixed[d]	314	132	NR	2.35	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
(continued)	Oyster	Whole	3	1	ND-0.41	0.22	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	5.8-9.7	7.5	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	3-4.1	3.53	Fat	S. Mississippi	NR	94	14	purchased at supermarket

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Crawfish	Head	2	2	0.91-4.7	2.81	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	1	ND-1.9	1.53	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	1	ND-0.39	0.25	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	1	ND-7.6	3.94	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	2.5	2.5	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	NR	1	1	3.0	3.0	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	6.9	6.9	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	3.5	3.5	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.05-0.16	0.11	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	0	ND(0.02)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	0.12	0.12	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	0	ND(0.1)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Skate	Whole	1	1	0.04	0.04	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	1	0.03	0.03	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.06	0.06	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,4,7,8-HxCDF (continued)	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0.11-62	2.8	Fat	Germany	NR	93-96	20	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	2.2	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	4.66	Fat	Russia	NR	96	22	purchased in supermarkets
1,2,3,6,7,8-HxCDF	Herring	Whole	1	1	0.1	0.1	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	2	0.4-0.8	0.6	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
	Herring	Whole	2	2	0.2	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Pike	Muscle	8	8	5.6-22	11.9	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	1	5.6	5.6	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	0	ND(0.26-2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.41-2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(1.13-1.30)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(0.72)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(2.84-2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	5	0	ND(0.52-2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	1	ND-1.35	0.87	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,6,7,8-HxCDF	Brown Trout	Whole	1	0	ND(0.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
(continued)	Brown Trout	Fillet	2	0	ND(0.23-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(0.45-0.58)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.46)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(2.83)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.21-2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.20-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,6,7,8-HxCDF (continued)	Winter Flounder	Whole	2	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(2.84)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(2.85)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	66	NR	1.74	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	3	0.29-0.79	0.47	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	2.8-3.6	3.13	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	1.6-2.1	1.9	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	0.63-1.8	1.22	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	0	ND(0.7-1.05)	0.88	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	1	ND-0.18	0.02	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	0	ND(0.24-1.1)	0.67	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	2.1	2.1	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	1	1.7	1.7	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Herring	NR	1	1	4.2	4.2	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	13	13	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	6.0	6.0	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.02-0.06	0.04	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	1	0.06	0.06	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	0.16	0.16	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
1,2,3,6,7,8-HxCDF	Cod	Whole	1	0	ND(0.1)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
(continued)	Skate	Whole	1	1	0.05	0.05	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	1	0.06	0.06	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.04	0.04	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0-36.5	2.1	Fat	Germany	NR	93-96	20	official foor inspection samples
	Fish & Seafood	NR	8	NR	NR	0.7	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	1.69	Fat	Russia	NR	96	22	purchased in supermarkets
1,2,3,7,8,9-HxCDF	Pike	Muscle	8	0	ND(3-6)	NA	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	0	ND(6)	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	0	ND(0.26-2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.41-2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(1.13-1.30)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(0.72)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(2.77-2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
1,2,3,7,8,9-HxCDF (continued)	Carp	Whole	5	0	ND(0.52-2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	not available	Whole	2	0	ND(0.77-0.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.23-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(0.39-0.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.46)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	lack Redhorse	Whole	1	0	ND(2.76)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.21-2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.20-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(2.77)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
1,2,3,7,8,9-HxCDF	Dolly Varden	Whole	2	0	ND(2.77)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
(continued)	Composite Bottom	Whole	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(2.77-2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(2.77)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(2.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	3	NR	1.22	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	0	ND(0.15-0.22)	0.17	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	0	ND(0.09-0.13)	0.11	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	0	ND(0.6-0.9)	0.75	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	0.7-0.31	0.51	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	0	ND(0.85-1.4)	1.13	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	0	ND(0.05-0.08)	0.04	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	0	ND(0.34-1.6)	0.97	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	ND(0.22)	0.22	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	0	ND(0.04)	NA	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Plaice	Whole	3	1	ND-0.02	0.015	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	0	ND(0.04)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
1,2,3,7,8,9-HxCDF	Herring	Whole	1	0	ND(0.05)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
(continued)	Cod	Whole	1	0	ND(0.1)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Skate	Whole	1	0	ND(0.05)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	0	ND(0.04)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0-0.5	0.01	Fat	Germany	NR	93-96	20	official foor inspection samples
	Fish & Seafood	NR	8	NR	NR	0.5	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	2.74	Fat	Russia	NR	96	22	purchased in supermarkets
2,3,4,6,7,8-HxCDF	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	2	0.4-0.8	0.6	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
	Herring	Whole	2	2	0.3	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Pike	Muscle	8	7	ND(3-17)	7.96	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	0	ND(6)	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	0	ND(0.26-1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	4	0	ND(0.41-1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(1.13-1.30)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(0.72)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
2,3,4,6,7,8-HxCDF (continued)	Sm Bass	Fillet	2	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	5	1	ND-0.92	0.76	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	not available	Whole	2	0	ND(0.78-2.72)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Whole	1	0	ND(0.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.23-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(0.45-0.58)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(1.46)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(1.95)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	1.25	1.25	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(0.52)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.21-1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.20-0.42)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.20)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(1.97)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
2,3,4,6,7,8-HxCDF (continued)	Summer Flounder	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(1.95-1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Composite Bottom	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(1.96)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	100	NR	1.24	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	3	0.59-0.65	0.72	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	2.2-2.6	2.33	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	0	ND(0.6-0.85)	0.73	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	0.38-1.8	1.09	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	0	ND(0.85-1.35)	1.1	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	0	ND(0.04-0.07)	0.056	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	0	ND(0.3-1.4)	0.85	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	1.2	1.2	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	1	3.9	3.9	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Herring	NR	1	1	3.6	3.6	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
2,3,4,6,7,8-HxCDF (continued)	Cod	NR	1	1	8.2	8.2	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	7.2	7.2	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.04-0.13	0.08	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	1	0.03	0.03	Wet	Norwich, UK	NR	88	17	purchased at retail outlet

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Herring	Whole	1	1	0.15	0.15	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	0	ND(0.1)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Skate	Whole	1	1	0.04	0.04	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	1	0.03	0.03	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.07	0.07	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0-29	1.8	Fat	Germany	NR	93-96	20	official food inspection samples
	Fish & Seafood	NR	8	0	ND	NA	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	2.31	Fat	Russia	NR	96	22	purchased in supermarkets
HxCDFs	Bream	NR	13	13	5.7-47.4	25.2	Fresh	Hamburg, Germany	Urban	84	3	
	Perch	NR	2	2	21.9-53.8	37.8	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	2	ND-24	10.0	NR	Mississippi River, MN	Industrial	NR	5	Elk river power station
	Carp	Whole	3	3	2.7-5.1	3.5	NR	Lake Orono, MN	Industrial	NR	5	Elk river power station
	Blue Crab	Meat	2	2	9.3-9.4	9.35	Wet	Passaic River, NJ	Urban	NR	7	
HxCDFs (continued)	Lobster	Meat	2	2	7.7-7.9	7.8	Wet	New York Bight	Dump Site	NR	7	former sewage sludge
	Str. Bass	Fillets	2	2	2.0-4.4	3.2	Wet	Newark Bay, NJ	Urban	NR	7	
	Br. Trout	Whole	1	1	2	2	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Br. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Whole	1	1	8	8	NR	Lake Ontario	NR	NR	9	composite 3 samples

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Rb. Trout	Fillets	1	1	2	2	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Whole	1	1	16	16	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Oyster	Whole	3	3	6.6-22	13.53	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	86-150	115.33	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	3	35-73	49	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	8.9-63	35.95	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	7.5-53	30.25	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	11	NA	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
non-2,3,7,8-HxCDFs	Barbel	Fillets	1	1	2.1	2.1	Fat	Neckar River, Germany	Urban	88	2	
Heptachlorodibenzofurans (MW=409.31)												
1,2,3,4,6,7,8-HpCDF	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
1,2,3,4,6,7,8-HpCDF	Herring	Whole	2	2	0.8-1.2	1.0	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
(continued)	Herring	Whole	2	1	ND-0.9	0.5	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Carp	Whole	2	2	3-4	3.5	NR	Lake Huron	NR	NR	11	samples composite 3-5 fish
	Pike	Muscle	16	1	ND(3-7)-17	3.41	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	2	0	ND(6-11)	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	3	ND-1.88	0.96	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Lm Bass	Fillet	2	0	ND(1.44-1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(6.61-8.89)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.40)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	5	3	ND-1.31	0.71	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	1	ND-1.13	2.21	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.77-0.80)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	1	ND-0.48	0.56	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(4.13)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Gray Redhorse	Whole	1	0	ND(2.75)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Redhorse	Whole	1	0	ND(2.25)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	1	1.25	1.25	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,4,6,7,8-HpCDF (continued)	Longear Sunfish	Whole	1	0	ND(3.11)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.71-1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.27-1.28)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.35)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	1	0.27	0.27	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(1.44-1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	1	0.23	0.23	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(1.78)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(1.45)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	170	NR	1.91	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
	Oyster	Whole	3	3	1.3-1.8	1.5	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	6-7.7	6.83	Fat	S. Mississippi	NR	94	14	purchased at supermarket

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,4,6,7,8-HpCDF (continued)	Blue Crab	Claw	3	3	4.4-6.2	5.13	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	1-7.3	4.15	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	4.9-9.9	7.4	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	1	ND-42	0.18	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	2	1.5-3.1	2.3	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	2.1	2.1	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	1	0.38	0.38	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Herring	NR	1	1	1.6	1.6	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	10	10	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	1.5	1.5	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.04-0.10	0.07	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	1	0.07	0.07	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	0.14	0.14	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	0	ND(0.2)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Skate	Whole	1	1	0.06	0.06	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	1	0.05	0.05	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.10	0.10	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Fish	Whole	1	1	0.08	0.08	Wet	Stonehaven, UK	Rural	91	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
1,2,3,4,6,7,8-HpCDF (continued)	Fish	NR	138	NR	0-14.1	1.3	Fat	Germany	NR	93-96	20	official food inspection samples

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Fish & Seafood	NR	8	NR	NR	2.0	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	6.74	Fat	Russia	NR	96	22	purchased in supermarkets
1,2,3,4,7,8,9-HpCDF	Pike	Muscle	8	0	ND(3-11)	NA	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish
	Pike	Muscle	1	0	ND(6)	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Sucker	Whole	15	0	ND(0.71-4.23)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Lm Bass	Fillet	2	0	ND(2.61-2.26)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Whole	2	0	ND(2.64-5.92)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rock Bass	Fillet	1	0	ND(1.40)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sm Bass	Fillet	2	0	ND(2.61-2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Redeye Bass	Fillet	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Carp	Whole	3	0	ND(2.61-2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	not available	Whole	2	0	ND(1.12-1.64)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brown Trout	Fillet	2	0	ND(0.77-0.80)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Rainbow Trout	Fillet	2	0	ND(0.63-0.91)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Brook Trout	Fillet	1	0	ND(4.13)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
1,2,3,4,7,8,9-HpCDF	Gray Redhorse	Whole	1	0	ND(2.75)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
(continued)	Black Redhorse	Whole	1	0	ND(3.82)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Golden Redhorse	Whole	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Longear Sunfish	Whole	1	0	ND(3.11)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Walleye	Fillet	3	0	ND(0.71-2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Chain Pickerel	Fillet	3	0	ND(0.27-1.28)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Black Crappie	Fillet	1	0	ND(0.23)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Sea Catfish	Fillet	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	North Hogsucker	Whole	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Summer Flounder	Whole	1	0	ND(2.61)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Dolly Varden	Whole	2	0	ND(2.61)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Composite Bottom	Whole	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Winter Flounder	Whole	2	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Bluefish	Whole	1	0	ND(3.12)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	White Catfish	Whole	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Crayfish	Whole	1	0	ND(2.62)	NA	Wet	Various, US	Background	86-89	13	samples composite 3-5 fish
	Various[c]	Mixed[d]	314	13	NR	1.24	Wet	Various, US	Various	86-89	13	samples composite 3-5 fish
1,2,3,4,7,8,9-HpCDF (continued)	Oyster	Whole	3	0	ND(0.15-0.21)	0.17	Fat	S. Mississippi	NR	94	14	purchased at supermarket

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Blue Crab	Body	3	1	ND-0.79	0.33	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	0	ND(0.65-0.95)	0.8	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	2	0.19-0.47	0.28	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	0	ND(0.95-1.4)	1.18	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	0	ND(0.07-0.09)	0.08	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	0	ND(0.33-1.5)	0.92	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	0	ND(0.44)	0.44	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	0	ND(0.04)	NA	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Plaice	Whole	3	1	ND-0.02	0.03	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	0	ND(0.08)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	0	ND(0.06)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	0	ND(0.2)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Skate	Whole	1	0	ND(0.13)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Coley	Whole	1	0	ND(0.10)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	0	<0.01	<0.01	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,4,7,8,9-HpCDF (continued)	Fish	NR	138	NR	0-1.1	0.08	Fat	Germany	NR	93-96	20	official foor inspection samples
	Fish & Seafood	NR	8	NR	NR	0.3	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	2.26	Fat	Russia	NR	96	22	purchased in supermarkets
HpCDFs	Bream	NR	13	13	1.8-6.0	3.6	Fresh	Hamburg, Germany	Urban	84	3	
	Perch	NR	2	2	5.0-10.1	7.6	Fresh	Hamburg, Germany	Urban	84	3	
	Carp	Whole	3	1	ND-14	4.7	NR	Mississippi River, MN	Industrial	NR	5	Elk river power station
	Carp	Whole	3	0	ND(6.6)	NA	NR	Lake Orono, MN	Industrial	NR	5	Elk river power station
	Blue Crab	Meat	2	2	2.8-3.5	3.15	Wet	Passaic River, NJ	Urban	NR	7	
	Lobster	Meat	2	0	ND(0.9)	NA	Wet	New York Bight	Dump Site	NR	7	former sewage sludge
	Str. Bass	Fillets	2	2	1.3-2.4	1.8	Wet	Newark Bay, NJ	Urban	NR	7	
	Br. Trout	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Br. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Whole	1	1	1	1	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Whole	1	1	1	1	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Oyster	Whole	3	3	2.3-3.2	2.87	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	3	8.1-12	9.53	Fat	S. Mississippi	NR	94	14	purchased at supermarket
HpCDFs (continued)	Blue Crab	Claw	3	3	4.6-6.6	5.43	Fat	S. Mississippi	NR	94	14	purchased at supermarket

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Crawfish	Head	2	2	1.1-7.8	4.45	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	5.2-14	9.6	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	3.3	3.3	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fresh Fish	Mixed	10	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
Octachlorodibenzofurans (MW=444.76)												
1,2,3,4,6,7,8,9-OCDF	Bream	NR	14	10	ND-3.1	1.2	Fresh	Hamburg, Germany	Urban	84	3	
	Perch	NR	3	3	1.1-8.3	3.7	Fresh	Hamburg, Germany	Urban	84	3	
	Herring	Whole	1	0	ND(0.2)	NA	Fresh	Atlantic Coast, Sweden	Pristine	NR	4	composite 2-5 fish
	Herring	Whole	2	1	ND-0.3	0.2	Fresh	Baltic Sea, Sweden	Urban	NR	4	composite 2-5 fish
	Herring	Whole	2	0	ND(0.2)	NA	Fresh	Gulf of Bothnia, Sweden	Industrial	NR	4	composite 2-5 fish
	Salmon	Muscle	2	0	ND(2.0)	NA	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	wild salmon
	Salmon	Muscle	2	0	ND(0.5)	NA	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	hatched salmon
	Perch	NR	3	1	ND-1.7	0.57	Fresh	Gulf of Bothnia, Sweden	NR	NR	4	caught near pulp mill
	Carp	Whole	3	0	ND(6.6)	NA	NR	Mississippi River, MN	Industrial	NR	5	Elk river power station
	Carp	Whole	3	3	ND(6.6)	NA	NR	Lake Orono, MN	Industrial	NR	5	Elk river power station
	Blue Crab	Meat	2	0	ND(8.3)	NA	Wet	Passaic River, NJ	Urban	NR	7	
	Lobster	Meat	2	0	ND(8.4)	NA	Wet	New York Bight	Dump Site	NR	7	former sewage sludge
	Str. Bass	Fillets	2	0	ND(3.1)	NA	Wet	Newark Bay, NJ	Urban	NR	7	
	Lake Trout	Whole	1	1	0.4	0.4	Wet	Lake Superior	NR	84	8	mean 5 samples
1,2,3,4,6,7,8,9-OCDF	Lake Trout	Whole	1	1	0.1	0.1	Wet	Lake Huron	NR	84	8	mean 5 samples
(continued)	Lake Trout	Whole	3	3	0.3-1.0	0.85	Wet	Lake Michigan	NR	84	8	range 3 sample sites

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Walleye	Whole	1	1	0.9	0.9	Wet	Lake Erie	NR	84	8	mean 5 samples
	Walleye	Whole	1	1	0.4	0.4	Wet	Lake St. Clair	NR	84	8	mean 5 samples
	Lake Trout	Whole	1	1	0.4	0.4	Wet	Lake Ontario	NR	84	8	mean 5 samples
	Br. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Rb. Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Whole	1	1	2	2	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Lake Trout	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Whole	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Coho Salmon	Fillets	1	0	ND(7)	NA	NR	Lake Ontario	NR	NR	9	composite 3 samples
	Cod	Fillets	4	4	3.4-9.6	6.3	Fresh	Various, Sweden	Industrial	88	10	
	Haddock	Fillets	1	1	4.3	4.3	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	P. Flounder	Fillets	1	1	4.7	4.7	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	Plaice	Fillets	1	1	41	41	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	Flounder	Fillets	1	1	5.6	5.6	Fresh	Various, Sweden	Industrial	88	10	composite 10 samples
	Eel	Fillets	4	4	31-581	205	Fresh	Various, Sweden	Industrial	88	10	
	Mussel	Muscle	3	3	13.4-933	339	Fresh	Grenlandsfjord,Sweden	Industrial	87	10	
	Shrimp	Muscle	2	2	2.3-41	21.6	Fresh	Grenlandsfjord,Sweden	Industrial	88	10	
	Cod	Fillets	6	NR	ND-21	NR	Fresh	Frierfjord, Sweden	Industrial	87	10	only conc. range given
1,2,3,4,6,7,8,9-OCDF	Fresh Fish		10	0	ND	NA	Fat	Various U.S. Sites		NR	10	
(continued)	Carp	Whole	2	2	4-8	6	NR	Lake Huron	NR	NR	11	samples composite 3-5 fish
	Pike	Muscle	8	0	ND(3-11)	NA	Fat	Lake Vanern, Sweden	Industrial	88	12	samples composite 2-5 fish

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
	Pike	Muscle	1	0	ND(11)	NA	Fat	Hedesunda Bay, Sweden	Industrial	88	12	composite 5 fish
	Oyster	Whole	3	3	3.1-4.9	4.00	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Body	3	2	ND-0.77	0.5	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Blue Crab	Claw	3	0	ND(1.2-1.95)	1.52	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Head	2	0	ND(0.27-0.38)	0.16	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Crawfish	Tail	2	2	7.7-57	32.35	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Catfish	Fillet	3	0	ND(0.08-0.12)	0.96	Fat	S. Mississippi	Farm raised	94	14	purchased at supermarket
	Mullet	Fillet	2	2	1.5-6.6	4.05	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Spanish Mackerel	Fillet	1	1	1.8	1.8	Fat	S. Mississippi	NR	94	14	purchased at supermarket
	Herring	Fillet	1	0	ND(0.07)	NA	Fresh	Baltic Sea, Sweden	NR	88	15	sample composite 12 fillets
	Herring	NR	1	1	1.4	1.4	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Cod	NR	1	1	2.1	2.1	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Redfish	NR	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	16	purchased at different shops
	Plaice	Whole	3	3	0.08-0.23	0.16	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Mackeral	Whole	1	1	0.20	0.20	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Herring	Whole	1	1	0.19	0.19	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Cod	Whole	1	1	0.26	0.26	Wet	Norwich, UK	NR	88	17	purchased at retail outlet

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Chemical	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location[b]	Location description	Samp. year	Ref. no.	Comments
1,2,3,4,6,7,8,9-OCDF	Skate	Whole	1	1	0.14	0.14	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
(continued)	Coley	Whole	1	0	ND(0.30)	NA	Wet	Norwich, UK	NR	88	17	purchased at retail outlet
	Fish	Whole	1	1	0.14	0.14	Wet	Port Talbot, UK	Urban/ Industrial	88	18	
	Fish	Whole	1	1	0.20	0.02	Wet	Stonehaven, UK	Rural	91	18	
	Ocean Fish	Mixed	13	0	ND	NA	Fat	Various U.S. Sites	Urban	NR	19	purchased at supermarket
	Fish	NR	138	NR	0-46	1.2	Fat	Germany	NR	93-96	20	official food inspection samples
	Fish & Seafood	NR	8	NR	NR	8.8	Fat	Catalonia, Spain	NR	96	21	purchased in supermarkets
	Freshwater Fish	NR	NR	NR	NR	6.63	Fat	Russia	NR	96	22	purchased in supermarkets

Footnote References

[a] Br. = Brown; Smk. = Smoked; Str. = Striped; Lg. M. = Large Mouth; Rb. = Rainbow; P. = Pole; Y. = Yellow.

[b] Various, Netherlands = samples taken from six locations around IJsselmeer Lake; Various, Sweden = samples taken from Grenlandsfjord and Frierfjord; Various US = samples taken from 314 sites across the US, including industrial and background sites.

[c] Species were taken from both bottom feeders and open water feeders, and then composited.

[d] Whole fish samples and fillet samples were combined during analysis.

NOTES: Summary statistics provided in or derived from references; when reference did not compute mean, it was computed using one-half the detection limit for non-detects;
NA = not applicable;
ND = non-detected (limit of detection);
NR = not reported;
Descriptions provided were those given by reference or surmised from study description when not given;
One half the detection limit was used in calculating means. Therefore, it is possible to have mean concentrations greater than the range (e.g., reported detection limit for non detects greater than the positive sample).

Table B-12. Environmental Levels of Dibenzofurans in Fish (ppt) (continued)

Sources:

1. Van den Berg (1987)
2. Frommberger (1991)
3. Gotz and Schumacher (1990)
4. Rappe et al. (1989b)
5. Reed et al. (1990)
6. Gardner and White (1990)
7. Rappe et al. (1991)
8. DeVault et al. (1989)
9. Niimi and Oliver (1989a)
10. Oehme et al. (1989)
11. Stalling et al. (1983)
12. Kjeller et al. (1990)
13. U.S. EPA (1992)
14. Fiedler et al. (1997)
15. deWit et al. (1990)
16. Beck et al. (1989)
17. Startin et al. (1990)
18. MAFF (1992)
19. Schecter et al. (1996)
20. Malisch (1998)
21. Domingo et al. (1999)
22. Amirova et al. (1997)

Table B-13. Environmental Levels of PCBs in Fish (ppt)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
Tetrachloro-PCB (MW=291.99)												
3,3',4,4'-TCB (77)	Baltic Herring	NR	6	NR	33-136	97	Wet	Finland	Urban	NR	1	
	Rainbow Trout	NR	4	NR	80-150	100	Wet	Finland	Urban	NR	1	
	Other Fish	NR	4	NR	5.6-153	53	Wet	Finland	Urban	NR	1	3 samples of white fish and one pike perch
	Freshwater Fish	NR	NR	NR	NR	36	Wet	Canada	Urban	86-88	2	
	Ocean Fish	Mixed	NR	NR	NR	6.19	Wet	Various U.S. Locations	Urban	95	3	
	Fresh Fish	Mixed	NR	0	ND	NA	Wet	Various U.S. Locations	Urban	95	3	
	Blk. Bullhead	Whole	1	1	89,000	89,000	NR	Waukegan Harbor, IL	NR	78	4	composite 6 samples
	Lg. M. Bass	Whole	1	1	86,000	86,000	NR	Waukegan Harbor, IL	NR	78	4	
	Blk. Crappie	Whole	1	1	43,000	43,000	NR	Waukegan Harbor, IL	NR	78	4	composite 3 samples
	Wh. Sucker	Whole	1	1	50,000	50,000	NR	Waukegan Harbor, IL	NR	78	4	composite 6 samples
	Coho Salmon	Whole	1	1	2,000	2,000	NR	Waukegan Harbor, IL	NR	78	4	
	Wh. Crappie	Whole	1	1	24,000	24,000	NR	Waukegan Harbor, IL	NR	78	4	
	Y. Perch	Whole	1	1	23,000	23,000	NR	Waukegan Harbor, IL	NR	78	4	composite 5 samples
	Br. Trout	Whole	1	1	5,000	5,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
	Br. Trout	Fillets	1	1	2,000	2,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
	Lake Trout	Whole	1	1	18,000	18,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Lake Trout	Fillets	1	1	8,000	8,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Rb. Trout	Whole	2	2	6000-11,000	8,500	NR	Lake Ontario	NR	NR	5	
	Rb. Trout	Fillets	2	1	ND-4,000	2,000	NR	Lake Ontario	NR	NR	5	

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
3,3',4,4'-TCB (continued)	Coho Salmon	Whole	2	2	8000-10,000	9,000	NR	Lake Ontario	NR	NR	5	
	Coho Salmon	Fillets	2	2	3,000-5,000	4,000	NR	Lake Ontario	NR	NR	5	
	Carp	Whole	1	0	ND(5,000)	NA	NR	Saginaw Bay	NR	NR	6	
	White Catfish	Whole	3	3	38.6-120.6	89.3	Wet	San Joaquin River	Industrial	NR	9	
	Channel Catfish	Whole	2	2	14.2-1,095	554.7	Wet	Antioch	Industrial	NR	9	
	White Catfish	Whole	1	1	40.47	40.47	Wet	Sacramento River	Industrial	NR	9	
	Channel Catfish	Whole	1	1	25.99	25.99	Wet	Sacramento River	Industrial	NR	9	
	Yellowfin Goby	Whole	1	1	54.04	54.04	Wet	Sacramento River	Industrial	NR	9	
	Yellowfin Goby	Whole	1	1	54.92	54.92	Wet	San Pablo Bay	Industrial	NR	9	
	Staghorn Sculpin	Whole	1	1	38.62	38.62	Wet	San Pablo Bay	Industrial	NR	9	
	Diamond Turbot	Whole	1	1	78.91	78.91	Wet	San Pablo Bay	Industrial	NR	9	
	Starry Flounder	Whole	1	1	80.64	80.64	Wet	San Pablo Bay	Industrial	NR	9	
3,4,4',5-TCB (81)	Br. Trout	Whole	1	1	24,000	24,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
	Br. Trout	Fillets	1	1	10,000	10,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
	Lake Trout	Whole	1	1	90,000	90,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Lake Trout	Fillets	1	1	38,000	38,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Rb. Trout	Whole	2	2	13,000-30,000	21,500	NR	Lake Ontario	NR	NR	5	
	Rb. Trout	Fillets	2	1	ND-9,000	4,500	NR	Lake Ontario	NR	NR	5	

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
3,4,4',5-TCB	Coho Salmon	Whole	2	2	2,000-26,000	14,000	NR	Lake Ontario	NR	NR	5	
(81)	Coho Salmon	Fillets	2	2	8,000-14,000	11,000	NR	Lake Ontario	NR	NR	5	
(continued)	Carp	Whole	1	1	17,000	NA	NR	Saginaw Bay	NR	NR	6	
TCBs	Various[c]	Mixed[d]	362	263	NR	696,240	Wet	Various, US[b]	Various	86-89	7	samples composite 3-5 fish
Pentachloro-PCB (MW=326.44)												
3,3',4,4',5-PeCB	Baltic Herring	NR	6	NR	7.4-26	17	Wet	Finland	Urban	NR	1	
(126)	Rainbow Trout	NR	4	NR	5.2-35	17	Wet	Finland	Urban	NR	1	
	Other Fish	NR	4	NR	2.3-28	11	Wet	Finland	Urban	NR	1	3 samples of white fish and one pike perch
	Freshwater Fish	NR	NR	NR	NR	8	Wet	Canada	Urban	86-88	2	
	Ocean Fish	Mixed	NR	NR	NR	0.83	Wet	Various U.S. Locations	Urban	95	3	
	Fresh Fish	Mixed	NR	0	ND	NA	Wet	Various U.S. Locations	Urban	95	3	
	Carp	Whole	1	0	ND(5,000)	NA	NR	Saginaw Bay	NR	NR	6	
	White Catfish	Whole	3	3	14.1-66.1	36.9	Wet	San Joaquin River	Industrial	NR	9	
	Channel Catfish	Whole	2	2	17.7-211	114.2	Wet	Antioch	Industrial	NR	9	
	White Catfish	Whole	1	1	25.3	25.3	Wet	Sacramento River	Industrial	NR	9	
	Channel Catfish	Whole	1	1	21.4	21.4	Wet	Sacramento River	Industrial	NR	9	
	Yellowfin Goby	Whole	1	1	12.33	12.33	Wet	Sacramento River	Industrial	NR	9	

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
	Yellowfin Goby	Whole	1	1	15.52	15.52	Wet	San Pablo Bay	Industrial	NR	9	
3,3',4,4',5-PeCB (126) (continued)	Staghorn Sculpin	Whole	1	1	17.36	17.36	Wet	San Pablo Bay	Industrial	NR	9	
	Diamond Turbot	Whole	1	1	61.37	61.37	Wet	San Pablo Bay	Industrial	NR	9	
	Starry Flounder	Whole	1	1	27.67	27.67	Wet	San Pablo Bay	Industrial	NR	9	
2,3,3',4,4'-PeCB (105)	Baltic Herring	NR	6	NR	960-2,700	1,700	Wet	Finland	Urban	NR	1	
	Rainbow Trout	NR	4	NR	410-2,100	1,200	Wet	Finland	Urban	NR	1	
	Other Fish	NR	4	NR	113-1,100	400	Wet	Finland	Urban	NR	1	3 samples of white fish and one pike perch
	Ocean Fish	Mixed	NR	NR	NR	120	Wet	Various U.S. Locations	Urban	95	3	
	Fresh Fish	Mixed	NR	0	ND	NA	Wet	Various U.S. Locations	Urban	95	3	
	Blk. Bullhead	Whole	1	1	352,000	352,000	NR	Waukegan Harbor, IL	NR	78	4	composite 6 samples
	Lg. M. Bass	Whole	1	1	290,000	290,000	NR	Waukegan Harbor, IL	NR	78	4	
	Blk. Crappie	Whole	1	1	114,000	114,000	NR	Waukegan Harbor, IL	NR	78	4	composite 3 samples
	Wh. Sucker	Whole	1	1	483,000	483,000	NR	Waukegan Harbor, IL	NR	78	4	composite 6 samples
	Coho Salmon	Whole	1	1	45,000	45,000	NR	Waukegan Harbor, IL	NR	78	4	
	Wh. Crappie	Whole	1	1	242,000	242,000	NR	Waukegan Harbor, IL	NR	78	4	
	Y. Perch	Whole	1	1	80,000	80,000	NR	Waukegan Harbor, IL	NR	78	4	composite 5 samples
	Small Smelt	Whole	1	1	15,000	15,000	Wet	Port Credit, Lake Ontario	NR	86	8	composite 48 samples
	Large Smelt	Whole	1	1	38,000	38,000	Wet	Vineland, Lake Ontario	NR	82	8	composite 20 samples
	Salmonids	Whole	1	1	110,000	110,000	Wet	Lake Ontario	NR	81-82	8	composite 60 samples

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
	Br. Trout	Whole	1	1	55,000	55,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
2,3,3',4,4'-PeCB	Br. Trout	Fillets	1	1	24,000	24,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
(105)	Lake Trout	Whole	1	1	253,000	253,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
(continued)	Lake Trout	Fillets	1	1	101,000	101,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Rb. Trout	Whole	2	2	34,000-138,000	86,000	NR	Lake Ontario	NR	NR	5	
	Rb. Trout	Fillets	2	2	6,000-50,000	28,000	NR	Lake Ontario	NR	NR	5	
	Coho Salmon	Whole	2	2	48,000-121,000	84,500	NR	Lake Ontario	NR	NR	5	
	Coho Salmon	Fillets	2	2	19,000-56,000	37,500	NR	Lake Ontario	NR	NR	5	
	Carp	Whole	1	1	427,000	427,000	NR	Saginaw Bay	NR	NR	6	
2,3,4,4',5-PeCB	Ocean Fish	Mixed	NR	0	ND	NA	NR	Various U.S. Locations	Urban	95	3	
(114)	Fresh Fish	Mixed	NR	NR	NR	250	NR	Various U.S. Locations	Urban	95	3	
	Carp	Whole	1	1	57,000	57,000	NR	Saginaw Bay	NR	NR	6	
2,3',4,4',5-PeCB	Ocean Fish	Mixed	NR	NR	NR	320	NR	Various U.S. Locations	Urban	95	3	
(118)	Fresh Fish	Mixed	NR	NR	NR	1,800	NR	Various U.S. Locations	Urban	95	3	
	Small Smelt	Whole	1	1	37,000	37,000	Wet	Port Credit, Lake Ontario	NR	86	8	composite 48 samples
	Large Smelt	Whole	1	1	87,000	87,000	Wet	Vineland, Lake Ontario	NR	82	8	composite 20 samples
	Salmonids	Whole	1	1	250,000	250,000	Wet	Lake Ontario	NR	81-82	8	composite 60 samples
	Br. Trout	Whole	1	1	133,000	133,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
	Br. Trout	Fillets	1	1	60,000	60,000	NR	Vineland, Lake Ontario	NR	NR	5	composite 10 samples
	Lake Trout	Whole	1	1	634,000	634,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Lake Trout	Fillets	1	1	242,000	242,000	NR	Port Credit, Lake Ontario	NR	NR	5	composite 10 samples
	Rb. Trout	Whole	2	2	80,000-310,000	195,000	NR	Lake Ontario	NR	NR	5	

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
2,3',4,4',5-PeCB (118) (continued)	Rb. Trout	Fillets	2	2	16,000-115,000	65,500	NR	Lake Ontario	NR	NR	5	
	Coho Salmon	Whole	2	2	100,000-271,000	185,500	NR	Lake Ontario	NR	NR	5	
	Coho Salmon	Fillets	2	2	39,000-136,000	87,500	NR	Lake Ontario	NR	NR	5	
	Carp	Whole	1	1	1.35×10^6	1.35×10^6	NR	Saginaw Bay	NR	NR	6	
PeCBs	Various[c]	Mixed[d]	362	314	NR	564,700	Wet	Various, US[b]	Various	86-89	7	composite 3-5 fish
Hexachloro-PCB (MW=360.88)												
3,3',4,4',5,5'-HxCB (169)	Baltic Herring	NR	6	NR	ND-12	4.5	Wet	Finland	Urban	NR	1	
	Rainbow Trout	NR	4	NR	ND-7.4	3.9	Wet	Finland	Urban	NR	1	
	Other Fish	NR	4	NR	0.6-6.5	1.9	Wet	Finland	Urban	NR	1	3 samples of white fish and one pike perch
	Freshwater Fish	NR	NR	NR	NR	< 1	Wet	Canada	Urban	86-88	2	
	Ocean Fish	Mixed	NR	NR	NR	0.2	Wet	Various U.S. Locations	Urban	95	3	
	Fresh Fish	Mixed	NR	NR	NR	0.94	Wet	Various U.S. Locations	Urban	95	3	
	Carp	Whole	1	0	ND(5,000)	NA	NR	Saginaw Bay	NR	NR	6	
	White Catfish	Whole	3	3	1.28-4.42	2.82	Wet	San Joaquin River	Industrial	NR	9	
	Channel Catfish	Whole	2	2	1.4-6.1	3.7	Wet	Antioch	Industrial	NR	9	
	White Catfish	Whole	1	1	2.23	2.23	Wet	Sacramento River	Industrial	NR	9	
	Channel Catfish	Whole	1	1	1.64	1.64	Wet	Sacramento River	Industrial	NR	9	
	Yellowfin Goby	Whole	1	1	1.19	1.19	Wet	Sacramento River	Industrial	NR	9	

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Chemical (IUPAC number)	Fish species[a]	Tissue	Number samples	Number positive samples	Concentration range	Conc. mean	Wt. basis	Location	Location description	Samp. year	Ref. no.	Comments
3,3',4,4',5,5'-HxCB (169) (continued)	Yellowfin Goby	Whole	1	1	1.63	1.63	Wet	San Pablo Bay	Industrial	NR	9	
	Staghorn Sculpin	Whole	1	1	1.96	1.96	Wet	San Pablo Bay	Industrial	NR	9	
	Diamond Turbot	Whole	1	1	9.89	9.89	Wet	San Pablo Bay	Industrial	NR	9	
	Starry Flounder	Whole	1	1	3.50	3.50	Wet	San Pablo Bay	Industrial	NR	9	
2,3,3',4,4',5-HxCB (156)	Small Smelt	Whole	1	1	2,700	2,700	Wet	Port Credit, Lake Ontario	NR	86	8	composite 48 samples
	Large Smelt	Whole	1	1	6,100	6,100	Wet	Vineland, Lake Ontario	NR	82	8	composite 20 samples
	Salmonids	Whole	1	1	34,000	34,000	Wet	Lake Ontario	NR	81-82	8	composite 60 samples
	Carp	Whole	1	1	79,000	79,000	NR	Saginaw Bay	NR	NR	6	
2,3,3',4,4',5'-HxCB (157)	Carp	Whole	1	1	76,000	76,000	NR	Saginaw Bay	NR	NR	6	
2,3',4,4',5,5'-HxCB (167)	Carp	Whole	1	1	77,000	77,000	NR	Saginaw Bay	NR	NR	6	
HxCBs	Various[c]	Mixed[d]	362	321	NR	355,930	Wet	Various, US[b]	Various	86-89	7	composite 3-5 fish
Heptachloro-PCB (MW=396.33)												
2,2',3,4,4',5,5-HpCB (180)	Ocean Fish	Mixed	NR	NR	NR	170	NR	Various U.S. Locations	Urban	95	3	
	Fresh Fish	Mixed	NR	NR	NR	810	NR	Various U.S. Locations	Urban	95	3	
2,3,3',4,4',5,5'-HpCB (189)	Carp	Whole	1	1	29,000	29,000	NR	Saginaw Bay	NR	NR	6	
HpCBs	Various[c]	Mixed[d]	362	250	NR	96,700	Wet	Various, US[b]	Various	86-89	7	composite 3-5 fish

Table B-13. Environmental Levels of PCBs in Fish (ppt) (continued)

Footnote References

[a] Blk. = Black; Lg. M. = Large Mouth; Wh. = White; Y. = Yellow; Br. = Brown; Rb. = Rainbow
[b] US = samples taken from 362 sites across the US, including industrial and background sites.
[c] Species were taken from both bottom feeders and open water feeders, and then composited.
[d] Whole fish samples and fillet samples were combined for analysis.

NOTES: Summary statistics provided in or derived from references; when reference did not compute composite, it was computed using one-half the detection limit for non-detects;
NA = not applicable;
ND = non-detected (limit of detection);
NR = not reported;
Descriptions provided were those given by reference or surmised from study description when not given.

Sources:
1. Himberg (1993)
2. Mes and Weber (1989)
3. Schecter et al. (1996)
4. Huckins et al. (1988)
5. Niimi and Oliver (1989b)
6. Smith et al. (1990)
7. U.S. EPA (1991)
8. Oliver and Niimi (1988)
9. Petreas (1991)

Table B-14. Levels of Dioxins in Food Products (ppt)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
Tetrachlorodibenzo-p-dioxins (MW=321.98)											
2,3,7,8-TCDD	Food basket	3	0	ND(0.1-0.4)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	0	ND(.012-.013)	NA	Whole	Switzerland	Background	NR	2	
	Milk	4	3	ND-0.049	0.027	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.2	0.2	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.08	0.08	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.03	0.03	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.01	0.01	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.2	0.2	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	1	1	0.0018	0.0018	Whole	U.S.		NR	4	
	Beef	3	3	0.017-0.062	0.032	Whole	U.S.		NR	4	
	Pork	3	0	ND(0.006)	NA	Whole	U.S.		NR	4	
	Milk	10	NR	ND-1.9	0.4	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Beef	3	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Veal	4	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Sheep	2	0	ND(0.5)	NA	Fat	W. Germany		NR	5	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
2,3,7,8-TCDD	Chicken	2	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
(continued)	Canned meat	2	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Milk	7	NR	ND-0.013	0.009[c]	Whole	England & Wales	Rural	1989	6	
	Cow cream	1	0	ND(0.15)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.03)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.34)	NA	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.72)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.53)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	0	ND(0.03)	NA	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.57)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	0	ND(0.34)	NA	Wet	South Vietnam		NR	7	
	Pork fat	1	0	ND(0.99)	NA	Wet	South Vietnam		NR	7	
	Chicken fat	1	0	ND(0.95)	NA	Wet	South Vietnam		NR	7	
	Milk	1	1	0.12[d]	0.12[d]	Whole	Vermont, U.S.	Background	87-88	8	
	Cottage cheese	1	0	ND(0.003)	NA	Wet	New York, NY		1990	9	
	Soft blue cheese	1	0	ND(0.05)	NA	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	0	ND(0.04)	NA	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	0.04	0.04	Wet	New York, NY		1990	9	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
2,3,7,8-TCDD	American cheese	1	1	0.07	0.07	Wet	New York, NY		1990	9	
(continued)	Beef	5	0	ND(0.12-0.41)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Beef	3	0	ND(0.16-0.40)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Pork	5	0	ND(0.07-0.52)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Pork	3	0	ND(0.39-0.49)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Chicken	5	2	ND-0.43	0.23	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Chicken	3	1	ND-1.67	0.70	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Eggs	5	0	ND(0.01-0.03)	NA	Whole	Los Angeles	Urban	NR	10	composite 6 samples
	Eggs	3	0	ND(0.01-0.03)	NA	Whole	San Francisco	Urban	NR	10	composite 6 samples
	Beef	3	3	0.005-0.028	0.017	Wet	New York, NY		1990	11	
	Pork	1	1	0.013	0.013	Wet	New York, NY		1990	11	
	Chicken	1	1	0.011	0.011	Wet	New York, NY		1990	11	
	Beef	63	11	ND-0.74	0.05	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Carcass Meat	2	1	ND-0.28	0.15	Whole	United Kingdom		88-91	13	
	Poultry	2	2	0.09-0.11	0.1	Whole	United Kingdom		88-91	13	
	Meat Products	1	1	0.05	0.05	Whole	United Kingdom		88-91	13	
	Milk Products	2	1	ND-0.02	0.035	Whole	United Kingdom		88-91	13	
	Butter	4	NR	0.14-0.16	0.15	Whole	United Kingdom		88-91	13	
	Cheddar Cheese	1	1	0.05	0.05	Whole	United Kingdom		88-91	13	
	Reduced Fat Cheese	1	0	ND	NA	Whole	United Kingdom		88-91	13	
2,3,7,8-TCDD	Fats & Oils	1	1	0.21	0.21	Whole	United Kingdom		88-91	13	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
(continued)	Eggs	2	2	0.05	0.05	Whole	United Kingdom		88-91	13	
	Green Vegetables	2	0	ND	NA	Whole	United Kingdom		88-91	13	
	Potatoes	1	0	ND	NA	Whole	United Kingdom		88-91	13	
	Fresh Fruit	2	0	ND	NA	Whole	United Kingdom		88-91	13	
	Milk	27	NR	ND-0.25	< 0.2	Fat	Germany		1992	14	
	Beef	9	NR	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	0	ND	NA	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.064	0.004	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Milk	3	3	0.06-0.07	0.06	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	0.05-0.07	0.06	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	0.05-0.09	0.06	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Eggs	3	0	ND(0.03-0.07)	0.04	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken	3	3	0.15-0.19	0.16	Fat	S. Mississippi	NR	1994	18	purchased from grocery store

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
2,3,7,8-TCDD	Chicken Liver	3	3	0.18-0.45	0.29	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
(continued)	Ground Beef	3	3	0.04-0.05	0.04	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	3	0.04-0.11	0.07	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	0.07	Fat	Various U.S. Sites	Background	1996	21	
	Pork	78	3	NR	0.10	Fat	Various U.S. Sites	Background	1995	22	
	Young Chicken	39	26	NR	0.16	Fat	Various U.S. Sites	Background	1996	23	
	Light Fowl	12	3	NR	0.05	Fat	Various U.S. Sites	Background	1996	23	
	Heavy Fowl	12	11	NR	0.43	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	11	NR	0.24	Fat	Various U.S. Sites	Background	1996	23	
	Eggs	3	0	NR	0.02	Whole	Various U.S. Sites		1995	24	
	Milk	538	NR	0 - 1.2	0.71	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0 - 0.26	0.64	Fat	Germany		93-96	25	official food inspection
	Eggs	218	NR	0 - 3.4	2.1	Fat	Germany		93-96	25	official food inspection
	Meat	107	NR	0.04 - 0.85	0.61	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	0.36	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	0.26	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	0.26	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	0.08	Fat	Russia		1996	26	supermarkets
	Goose Fat	NR	NR	NR	0.21	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	0.26	Fat	Russia		1996	26	supermarkets

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
2,3,7,8-TCDD (continued)	Chicken Fat	NR	NR	NR	0.23	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	0.1	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	ND	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	ND	Dry	Spain		1996	27	supermarkets
	Meat	7	NR	NR	0.1	Fat	Spain		1996	27	supermarkets
	Eggs	2	NR	NR	0.1	Fat	Spain		1996	27	supermarkets
	Milk & Dairy	6	NR	NR	ND	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	0.4	Fat	Spain		1996	27	supermarkets
	Butter	21	15	ND - 1.1	NR	Fat	Spain		NR	28	supermarkets
TCDD	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Eggs	3	0	NR	0.03	Whole	Various U.S. Sites		1995	24	
	Butter	18	11	ND - 1.5	NR	Fat	Spain		NR	28	supermarkets
Pentachlorodibenzo-p-dioxins (MW = 326.44)											
1,2,3,7,8-PeCDD	Food basket	3	0	ND(0.2-0.8)	NA	Fresh	Stockholm, Sweden	Urban	NR	1	
	Milk	2	0	ND(0.04-0.06)	NA	Whole	Switzerland	Background	NR	2	
	Milk	4	2	ND-0.25	0.12	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.7	0.7	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.41	0.41	Fat	Berlin, W. Germany	Urban	NR	3	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8-PeCDD	Beef fat	1	1	0.8	0.8	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
(continued)	Pork	1	1	0.12	0.12	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.5	0.5	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.7	0.7	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.4	0.4	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	NR	ND-2.5	1.2	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	NR	ND-0.8	0.6	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Beef	3	3	0.5-4.6	1.7	Fat	W. Germany		NR	5	
	Veal	4	4	2.5-3.4	3.1	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Sheep	2	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Chicken	2	2	0.9-1.2	1.0	Fat	W. Germany		NR	5	
	Canned meat	2	1	ND-0.9	0.6	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Milk	7	7	0.012-0.023	0.016[c]	Whole	England & Wales	Rural	1989	6	
	Cow cream	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.18)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8-PeCDD (continued)	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.26)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.17	0.17	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.50	0.50	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.95	0.95	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.01	0.01	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	0.2	0.2	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	0.11	0.11	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	0.11	0.11	Wet	New York, NY		1990	9	
	American cheese	1	1	0.12	0.12	Wet	New York, NY		1990	9	
	Beef	5	0	ND(0.40-17.50)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Beef	3	0	ND(0.49-1.09)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Pork	5	0	ND(1.00-4.36)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Pork	3	0	ND(1.94-2.70)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Chicken	5	0	ND(0.19-2.19)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Chicken	3	0	ND(0.44-7.40)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Eggs	5	0	ND(0.06-0.40)	NA	Whole	Los Angeles	Urban	NR	10	composite 6 samples
	Eggs	3	0	ND(0.04-0.06)	NA	Whole	San Francisco	Urban	NR	10	composite 6 samples

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8-PeCDD (continued)	Beef	3	3	0.01 - 0.208	0.093	Wet	New York, NY		1990	11	
	Pork	1	1	0.041	0.041	Wet	New York, NY		1990	11	
	Chicken	1	0	ND(0.011)	NA	Wet	New York, NY		1990	11	
	Beef	63	2	ND-3.04	0.35	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Carcass Meat	2	1	ND-0.41	0.22	Whole	United Kingdom		88-91	13	
	Offals	1	0	ND	NA	Whole	United Kingdom		88-91	13	
	Poultry	2	2	0.09-0.11	0.1	Whole	United Kingdom		88-91	13	
	Meat Products	2	1	ND-0.07	0.048	Whole	United Kingdom		88-91	13	
	Milk Products	2	1	ND-0.04	0.06	Whole	United Kingdom		88-91	13	
	Butter	4	NR	ND-0.48	0.32	Whole	United Kingdom		88-91	13	
	Cheddar Cheese	1	1	0.04	0.04	Whole	United Kingdom		88-91	13	
	Reduced Fat Cheese	1	1	0.05	0.05	Whole	United Kingdom		88-91	13	
	Fats & Oils	1	1	0.29	0.29	Whole	United Kingdom		88-91	13	
	Eggs	2	2	0.06-0.09	0.075	Whole	United Kingdom		88-91	13	
	Green Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	13	
	Potatoes	1	0	ND	NA	Whole	United Kingdom		88-91	13	
	Fresh Fruit	1	0	ND	NA	Whole	United Kingdom		88-91	13	
	Milk	9	9	0.34-0.76	0.46	Fat	Switzerland		1990	19	
	Milk	27	NR	0.22-0.56	0.37	Fat	Germany		1992	14	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8-PeCDD (continued)	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-40	< 10	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.168	0.041	Whole	Finland		1991	17	
	Beef	20	NR	ND-0.78	< 0.5	Fat	Finland		1991	17	
	Pork	20	0	< 0.2	< 0.2	Fat	Finland		1991	17	
	Milk	3	3	0.28-0.43	0.38	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	0.03-0.37	0.25	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	0.34-0.49	0.4	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Eggs	3	3	0.13-0.14	0.14	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken	3	3	0.18-0.25	0.22	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken Liver	3	3	0.27-0.46	0.35	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Ground Beef	3	3	0.18-0.35	0.25	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	2	ND-0.21	0.15	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	0.32	Fat	Various U.S. Sites	Background	1996	21	
	Pork	78	3	NR	0.45	Fat	Various U.S. Sites	Background	1995	22	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8-PeCDD	Young Chicken	39	8	NR	0.24	Fat	Various U.S. Sites	Background	1996	23	
(continued)	Light Fowl	12	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	23	
	Heavy Fowl	12	4	NR	0.32	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	5	NR	0.32	Fat	Various U.S. Sites	Background	1996	23	
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1995	24	
	Milk	538	NR	0 - 1.3	0.25	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0 - 0.48	0.21	Fat	Germany		93-96	25	official food inspection
	Eggs	218	NR	0 - 8.2	0.68	Fat	Germany		93-96	25	official food inspection
	Meat	107	NR	0.03 - 2.4	0.3	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	0.41	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	0.20	Fat	Russia		1996	26	supermarkets
	Goose Fat	NR	NR	NR	0.47	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Chicken Fat	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	0.1	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	ND	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	ND	Dry	Spain		1996	27	supermarkets
	Meat	7	NR	NR	ND	Fat	Spain		1996	27	supermarkets

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8-PeCDD (continued)	Eggs	2	NR	NR	0.1	Fat	Spain		1996	27	supermarkets
	Milk & Dairy	6	NR	NR	ND	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	0.1	Fat	Spain		1996	27	supermarkets
	Butter	21	19	ND - 1.08	NR	Fat	Spain		NR	28	supermarkets
PeCDDs	Cottage cheese	1	1	0.6	0.6	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	14	14	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	5	5	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	4	4	Wet	New York, NY		1990	9	
	American cheese	1	1	4	4	Wet	New York, NY		1990	9	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1995	24	
	Butter	21	19	ND - 1.23	NR	Fat	Spain		NR	28	supermarkets
Hexachlorodibenzo-p-dioxins (MW = 390.87)											
1,2,3,4,7,8-HxCDD	Food basket	3	0	ND(0.4-1.6)	NA	Fresh	Stockholm, Sweden	Urban	NR	1	
	Milk	2	1	ND-0.068	0.049	Whole	Switzerland	Background	NR	2	
	Milk	4	3	ND-0.23	0.14	Whole	Switzerland	Industrial	NR	2	near incinerators

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,7,8-HxCDD	Milk	1	1	0.3	0.3	Fat	W. Germany		NR	3	composite from 8 trucks
(continued)	Butter	1	1	0.15	0.15	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.21	0.21	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.5	0.5	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	1.3	1.3	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	NR	ND-2.0	0.8	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	10	0.2-0.4	0.3	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Beef	3	3	0.5-4.6	1.9	Fat	W. Germany		NR	5	
	Veal	4	4	1.1-3.0	1.9	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Sheep	2	2	0.7-1.0	0.8	Fat	W. Germany		NR	5	
	Chicken	2	1	ND-0.8	0.6	Fat	W. Germany		NR	5	
	Canned meat	2	1	ND-2.1	1.0	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Cow cream	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.18)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,7,8-HxCDD (continued)	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.26)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.012	0.012	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.24	NA	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.60	NA	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.48	NA	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.02	0.02	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	0.29	0.29	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	0.07	0.07	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	9	
	American cheese	1	1	0.017	0.017	Wet	New York, NY		1990	9	
	Eggs	5	0	ND(0.12-0.67)	NA	Whole	Los Angeles	Urban	NR	10	composite 6 samples
	Eggs	3	0	ND(0.08-0.25)	NA	Whole	San Fransisco	Urban	NR	10	composite 6 samples
	Chicken	1	0	ND(0.017)	NA	Wet	New York, NY		1990	11	
	Beef	63	8	ND-4.69	0.64	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Carcass Meat	2	2	0.32-1.1	0.71	Whole	United Kingdom		88-91	13	
	Offals	2	2	0.31-0.37	0.34	Whole	United Kingdom		88-91	13	
	Poultry	2	2	0.45-0.82	0.64	Whole	United Kingdom		88-91	13	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,7,8-HxCDD (continued)	Meat Products	2	2	0.17-0.24	0.21	Whole	United Kingdom		88-91	13	
	Milk Products	2	1	ND-0.11	0.14	Whole	United Kingdom		88-91	13	
	Butter	4	NR	0.7-0.94	0.82	Whole	United Kingdom		88-91	13	
	Cheddar Cheese	1	1	0.1	0.1	Whole	United Kingdom		88-91	13	
	Reduced Fat Cheese	1	1	0.12	0.12	Whole	United Kingdom		88-91	13	
	Fats & Oils	2	1	ND-0.41	0.31	Whole	United Kingdom		88-91	13	
	Eggs	2	2	0.22-0.29	0.26	Whole	United Kingdom		88-91	13	
	Green Vegetables	2	2	0.01-0.02	0.015	Whole	United Kingdom		88-91	13	
	Other Vegetables	2	2	0.11-0.24	0.175	Whole	United Kingdom		88-91	13	
	Potatoes	2	1	ND-0.12	0.07	Whole	United Kingdom		88-91	13	
	Fresh Fruit	1	0	ND	NA	Whole	United Kingdom		88-91	13	
	Milk	9	9	0.16-0.29	0.21	Fat	Switzerland		1990	19	
	Milk	27	NR	ND-0.53	0.29	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	0	ND	NA	Whole	Finland		1991	17	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,7,8-HxCDD	Beef	20	NR	ND-1.52	< 0.5	Fat	Finland		1991	17	
(continued)	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Eggs	20	0	ND	NA	Whole	Finland		1991	17	
	Milk	3	3	0.09-0.36	0.26	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	0.22-0.28	0.26	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	0.34-0.51	0.43	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Eggs	3	1	ND-0.18	0.10	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken	3	2	ND-0.19	0.15	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken Liver	3	3	0.19-0.39	0.29	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Ground Beef	3	3	0.15-0.47	0.27	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	3	0.26-1.2	0.59	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	0.39	Fat	Various U.S. Sites	Background	1996	21	
	Pork	78	12	NR	0.52	Fat	Various U.S. Sites	Background	1995	22	
	Young Chicken	39	4	NR	0.18	Fat	Various U.S. Sites	Background	1996	23	
	Light Fowl	12	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	23	
	Heavy Fowl	12	3	NR	0.24	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	2	NR	0.16	Fat	Various U.S. Sites	Background	1996	23	
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1995	24	
	Milk	538	NR	0 - 1.1	0.17	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0 - 0.48	0.14	Fat	Germany		93-96	25	official food inspection

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,7,8-HxCDD	Eggs	218	NR	0 - 8.4	0.56	Fat	Germany		93-96	25	official food inspection
(continued)	Meat	107	NR	0.03 - 2.2	0.23	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	0.44	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	0.65	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	0.1	Fat	Russia		1996	26	supermarkets
	Goose Fat	NR	NR	NR	0.19	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	0.08	Fat	Russia		1996	26	supermarkets
	Chicken Fat	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	0.4	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	0.3	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	ND	Dry	Spain		1996	27	supermarkets
	Meat	7	NR	NR	0.4	Fat	Spain		1996	27	supermarkets
	Eggs	2	NR	NR	0.3	Fat	Spain		1996	27	supermarkets
	Milk & Dairy	6	NR	NR	0.1	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	0.2	Fat	Spain		1996	27	supermarkets
	Butter	21	20	ND - 0.63	NR	Fat	Spain		NR	28	supermarkets
1,2,3,6,7,8-HxCDD	Food basket	3	0	ND(0.4-1.6)	NA	Fresh	Stockholm, Sweden	Urban	NR	1	
	Milk	2	1	ND-0.068	0.049	Whole	Switzerland	Background	NR	2	
	Milk	4	3	ND-0.29	0.18	Whole	Switzerland	Industrial	NR	2	near incinerators

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,6,7,8-HxCDD	Milk	1	1	1.1	1.1	Fat	W. Germany		NR	3	composite from 8 trucks
(continued)	Butter	1	1	0.95	0.95	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	1.9	1.9	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.29	0.29	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	1.5	1.5	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	2.8	2.8	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	1.4	1.4	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	10	0.5-10.0	4.0	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	10	0.4-1.2	0.8	Fat	W. Germany		NR	5	
	Butter	5	NR	ND-1.0	0.7	Fat	W. Germany		NR	5	
	Beef	3	3	1.3-6.0	3.2	Fat	W. Germany		NR	5	
	Veal	4	4	3.3-8.0	5.3	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Sheep	2	2	2.3-3.7	3.0	Fat	W. Germany		NR	5	
	Chicken	2	2	1.7-1.8	1.8	Fat	W. Germany		NR	5	
	Canned meat	2	2	0.9-7.4	3.2	Fat	W. Germany		NR	5	
	Lard	4	NR	ND-0.6	0.3	Fat	W. Germany		NR	5	
	Cow cream	1	1	0.135	0.135	Wet	USSR		88-89	7	
	Beef	1	1	0.018	0.018	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.288	0.288	Wet	USSR		88-89	7	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,6,7,8-HxCDD (continued)	Beef fat	1	1	0.340	0.340	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	1	0.318	0.318	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.048	0.048	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.47	0.47	Wet	South Vietnam		NR	7	
	Pork fat	1	1	1.69	1.69	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	3.8	3.8	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.07	0.07	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	1.72	1.72	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	0.7	0.7	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	0.58	0.58	Wet	New York, NY		1990	9	
	American cheese	1	1	0.38	0.38	Wet	New York, NY		1990	9	
	Beef	5	0	ND(0.74-2.72)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Beef	3	0	ND(1.64-4.08)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Pork	5	0	ND(0.64-3.60)	NA	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Pork	3	0	ND(1.06-2.92)	NA	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Chicken	5	1	ND-2.14	0.98	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Chicken	3	1	ND-4.30	1.84	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Eggs	5	0	ND(0.10-0.56)	NA	Whole	Los Angeles	Urban	NR	10	composite 6 samples

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,6,7,8-HxCDD (continued)	Eggs	3	0	ND(0.07-0.21)	NA	Whole	San Francisco	Urban	NR	10	composite 6 samples
	Beef	3	3	0.03-1.981	0.84	Wet	New York, NY		1990	11	
	Pork	1	1	0.282	0.282	Wet	New York, NY		1990	11	
	Chicken	1	1	0.04	0.04	Wet	New York, NY		1990	11	
	Beef	63	21	ND-12.46	1.42	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Milk	9	9	0.37-0.63	0.49	Fat	Switzerland		1990	19	
	Milk	27	NR	0.44-0.84	0.55	Fat	Germany		1992	14	
	Beef	9	NR	NR	4.92	Fat	Various U.S. Sites		NR	15	
	Chicken	7	ND	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	NR	1.81	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	1	0.22	0.22	Whole	U.S.		NR	16	fast food
	Pizza	1	1	0.149	0.149	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-69	47	Whole	Finland		1991	17	
	Beef	20	NR	ND-1.52	< 0.5	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Eggs	20	NR	ND-0.472	0.119	Whole	Finland		1991	17	
	Milk	3	3	0.68-2	1.46	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	1.5-1.8	1.67	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	1.7-2.3	1.9	Fat	S. Mississippi	NR	1994	18	purchased from grocery store

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,6,7,8-HxCDD	Eggs	3	3	0.16-0.39	0.26	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
(continued)	Chicken	3	3	0.29-1.3	0.7	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken Liver	3	3	0.42-0.6	0.5	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Ground Beef	3	3	0.95-3.4	2.02	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	3	0.63-1.3	0.97	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	1.87	Fat	Various U.S. Sites	Background	1996	21	
	Pork	78	29	NR	1.10	Fat	Various U.S. Sites	Background	1995	22	
	Young Chicken	39	24	NR	0.39	Fat	Various U.S. Sites	Background	1996	23	
	Light Fowl	12	8	NR	0.34	Fat	Various U.S. Sites	Background	1996	23	
	Heavy Fowl	12	11	NR	0.71	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	13	NR	0.79	Fat	Various U.S. Sites	Background	1996	23	
	Eggs	3	0	NR	0.16	Whole	Various U.S. Sites		1995	24	
	Milk	538	NR	0 - 2.6	0.44	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0 - 1.1	0.36	Fat	Germany		93-96	25	official food inspection
	Eggs	218	NR	0.09 - 35	1.7	Fat	Germany		93-96	25	official food inspection
	Meat	107	NR	0.04 - 5.4	0.42	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	0.36	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	0.11	Fat	Russia		1996	26	supermarkets

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,6,7,8-HxCDD (continued)	Goose Fat	NR	NR	NR	0.24	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	0.16	Fat	Russia		1996	26	supermarkets
	Chicken Fat	NR	NR	NR	0.59	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	0.8	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	0.8	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	ND	Dry	Spain		1996	27	supermarkets
	Meat	7	NR	NR	1.1	Fat	Spain		1996	27	supermarkets
	Eggs	2	NR	NR	1.7	Fat	Spain		1996	27	supermarkets
	Milk & Dairy	6	NR	NR	0.6	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	0.3	Fat	Spain		1996	27	supermarkets
	Butter	21	20	ND - 1.33	NR	Fat	Spain		NR	28	supermarkets
1,2,3,7,8,9-HxCDD	Food basket	3	0	ND(0.5-1.6)	NA	Fresh	Stockholm, Sweden	Urban	NR	1	
	Milk	2	1	ND-0.068	0.049	Whole	Switzerland	Background	NR	2	
	Milk	4	3	ND-0.17	0.10	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.4	0.4	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.26	0.26	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.06	0.06	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.4	0.4	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8,9-HxCDD	Eggs	1	1	0.5	0.5	Fat	Berlin, W. Germany	Urban	NR	3	
(continued)	Milk	10	NR	ND-3.0	0.8	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	10	0.3-0.9	0.5	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Beef	3	3	0.7-4.5	2.0	Fat	W. Germany		NR	5	
	Veal	4	4	1.2-3.0	1.8	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Sheep	2	NR	ND-1.1	0.7	Fat	W. Germany		NR	5	
	Chicken	2	2	0.5-0.6	0.6	Fat	W. Germany		NR	5	
	Canned meat	2	NR	ND-2.7	1.2	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.5)	NA	Fat	W. Germany		NR	5	
	Milk	7	NR	ND-0.018	0.010[c]	Whole	England & Wales	Rural	1989	6	
	Cow cream	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.18)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.26)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.012	0.012	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8,9-HxCDD (continued)	Pork sticks	1	1	0.10	0.10	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.40	0.40	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.67	0.67	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.02	0.02	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	0.29	0.29	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	9	
	American cheese	1	1	0.19	0.19	Wet	New York, NY		1990	9	
	Beef	5	0	ND(0.74-2.72)	NA	Fat	Los Angeles, CA		NR	10	
	Beef	3	0	ND(1.64-4.08)	NA	Fat	San Francisco, CA		NR	10	
	Pork	5	0	ND(0.64-3.6)	NA	Fat	Los Angeles,		NR	10	
	Pork	3	0	ND(1.06-2.92)	NA	Fat	San Francisco, CA		NR	10	
	Chicken	5	1	ND-2.14	NA	Fat	Los Angeles, CA		NR	10	
	Chicken	3	1	ND-4.30	NA	Fat	San Francisco, CA		NR	10	
	Beef	3	3	0.011-0.616	0.238	Wet	New York		1990	11	
	Pork	1	1	0.044	0.044	Wet	New York, NY		1990	11	
	Chicken	1	0	ND(0.014)	NA	Wet	New York, NY		1990	11	
	Beef	63	9	ND-3.68	0.53	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Milk	9	9	0.19-0.46	0.27	Fat	Switzerland		1990	19	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8,9-HxCDD	Milk	27	NR	ND-0.47	0.24	Fat	Germany		1992	14	
(continued)	Beef	9	NR	NR	1.04	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-67	28	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.436	0.082	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Milk	3	3	0.12-0.58	0.4	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	0.32-0.46	0.37	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	0.33-0.57	0.43	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Eggs	3	2	ND-0.1	0.07	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken	3	3	0.11-0.17	0.14	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken Liver	3	3	0.16-0.29	0.21	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Ground Beef	3	3	0.13-0.68	0.35	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	3	0.12-0.19	0.16	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	0.55	Fat	Various U.S. Sites	Background	1996	21	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8,9-HxCDD	Pork	78	5	NR	0.47	Fat	Various U.S. Sites	Background	1995	22	
(continued)	Young Chicken	39	12	NR	0.39	Fat	Various U.S. Sites	Background	1996	23	
	Light Fowl	12	1	NR	0.15	Fat	Various U.S. Sites	Background	1996	23	
	Heavy Fowl	12	5	NR	0.60	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	3	NR	0.17	Fat	Various U.S. Sites	Background	1996	23	
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1995	24	
	Milk	538	NR	0 - 0.82	0.18	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0 - 0.57	0.15	Fat	Germany		93-96	25	official food inspection
	Eggs	218	NR	0 - 16	0.82	Fat	Germany		93-96	25	official food inspection
	Meat	107	NR	0.03 - 1.9	0.20	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	0.71	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	ND	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	0.06	Fat	Russia		1996	26	supermarkets
	Goose Fat	NR	NR	NR	0.15	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	0.08	Fat	Russia		1996	26	supermarkets
	Chicken Fat	NR	NR	NR	0.7	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	0.5	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	0.3	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	ND	Dry	Spain		1996	27	supermarkets

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,7,8,9-HxCDD (continued)	Meat	7	NR	NR	0.3	Fat	Spain		1996	27	supermarkets
	Eggs	2	NR	NR	0.6	Fat	Spain		1996	27	supermarkets
	Milk & Dairy	6	NR	NR	0.1	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	ND	Fat	Spain		1996	27	supermarkets
	Butter	21	19	ND - 0.67	NR	Fat	Spain		NR	28	supermarkets
HxCDDs	Chicken fat	26	13	ND-67	27	Fat	Canada		1980	20	
	Beef	9	NR	NR	6.23	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	NR	2.39	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	NR	1.93	Fat	Various U.S. Sites		NR	15	
	Eggs	3	NR	NR	0.17	Whole	Various U.S. Sites		1995	24	
	Butter	20	18	ND - 2.45	NR	Fat	Spain		NR	28	supermarkets
Heptachlorodibenzo-p-dioxins (MW = 425.31)											
1,2,3,4,6,7,8-HpCDD	Food basket	3	0	ND(0.4-1.7)	NA	Fresh	Stockholm, Sweden	Urban	NR	1	
	Milk	2	2	0.064	0.064	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.066-0.42	0.21	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	2	2	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	1.5	1.5	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	18	18	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	2.1	2.1	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	15	15	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8-HpCDD	Chicken	1	1	6.0	6.0	Fat	Berlin, W. Germany	Urban	NR	3	
(continued)	Eggs	1	1	0.4	0.4	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	10	1.0-29.0	6.2	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	10	1.2-4.0	2.3	Fat	W. Germany		NR	5	
	Butter	5	5	0.5-5.0	1.7	Fat	W. Germany		NR	5	
	Beef	3	3	1.8-6.7	3.9	Fat	W. Germany		NR	5	
	Veal	4	4	2.6-43.7	14.4	Fat	W. Germany		NR	5	
	Pork	3	NR	ND-1.6	0.7	Fat	W. Germany		NR	5	
	Sheep	2	2	10.9-11.8	11.4	Fat	W. Germany		NR	5	
	Chicken	2	2	4.5-5.0	4.5	Fat	W. Germany		NR	5	
	Canned meat	2	2	2.5-33.0	13.2	Fat	W. Germany		NR	5	
	Lard	4	4	2.0-3.0	2.8	Fat	W. Germany		NR	5	
	Milk	7	NR	ND-0.066	0.046[c]	Whole	England & Wales	Rural	1989	6	
	Cow cream	1	1	0.450	0.450	Wet	USSR		88-89	7	
	Beef	1	1	0.156	0.156	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.720	0.720	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	1	1.44	1.44	Wet	USSR		88-89	7	
	Butter	1	1	0.530	0.530	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.240	0.240	Wet	USSR		88-89	7	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8-HpCDD (continued)	Sausage	1	1	0.57	0.57	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	2.84	2.84	Wet	South Vietnam		NR	7	
	Pork fat	1	1	7.44	7.44	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	13.3	13.3	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.18	0.18	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	5.88	5.88	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	2.11	2.11	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	1.51	1.51	Wet	New York, NY		1990	9	
	American cheese	1	1	1.13	1.13	Wet	New York, NY		1990	9	
	Beef	5	4	ND-6.71	4.48	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Beef	3	3	4.56-8.95	6.28	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Pork	5	5	3.32-45.50	14.74	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Pork	3	3	3.04-15.30	10.15	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Chicken	5	4	ND-35.20	9.64	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Chicken	3	3	1.10-11.40	4.62	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Eggs	5	0	ND(0.10-0.42)	NA	Whole	Los Angeles	Urban	NR	10	composite 6 samples
	Eggs	3	0	ND(0.08-0.24)	NA	Whole	San Francisco	Urban	NR	10	composite 6 samples
	Beef	3	3	0.117-12.065	4.45	Wet	New York, NY		1990	11	
	Pork	1	1	8.197	8.2	Wet	New York, NY		1990	11	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8-HpCDD	Chicken	1	1	0.133	0.13	Wet	New York, NY		1990	11	
(continued)	Beef	63	45	ND-47.56	4.48	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Carcass Meat	2	2	0.8-7.7	4.25	Whole	United Kingdom		88-91	13	
	Offals	2	2	2.6-8.1	5.35	Whole	United Kingdom		88-91	13	
	Poultry	2	2	1.3-3.7	2.5	Whole	United Kingdom		88-91	13	
	Meat Products	2	2	1.2-2.2	1.7	Whole	United Kingdom		88-91	13	
	Milk Products	2	2	0.21-0.60	0.4	Whole	United Kingdom		88-91	13	
	Butter	4	NR	0.98-2.9	1.9	Whole	United Kingdom		88-91	13	
	Cheddar Cheese	1	1	0.47	0.47	Whole	United Kingdom		88-91	13	
	Reduced Fat Cheese	1	1	0.48	0.48	Whole	United Kingdom		88-91	13	
	Fats & Oils	2	2	2.1-4.5	3.3	Whole	United Kingdom		88-91	13	
	Eggs	2	2	0.74-0.95	0.85	Whole	United Kingdom		88-91	13	
	Green Vegetables	2	2	0.12-0.13	0.125	Whole	United Kingdom		88-91	13	
	Other Vegetables	2	2	0.44-1.0	0.72	Whole	United Kingdom		88-91	13	
	Potatoes	2	2	0.18-1.2	0.69	Whole	United Kingdom		88-91	13	
	Fresh Fruit	2	2	1.3-3.6	2.45	Whole	United Kingdom		88-91	13	
	Milk	9	9	0.61-1.25	0.98	Fat	Switzerland		1990	19	
	Milk	27	NR	0.45-1.00	0.66	Fat	Germany		1992	14	
	Beef	9	NR	NR	20.9	Fat	Various U.S. Sites		NR	15	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8-HpCDD (continued)	Chicken	7	NR	NR	8.09	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	NR	17.1	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	1	0.862	0.862	Whole	U.S.		NR	16	fast food
	Pizza	1	1	0.936	0.936	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	1	0.454	0.454	Whole	U.S.		NR	16	fast food
	Milk	20	NR	12-82	53	Whole	Finland		1991	17	
	Eggs	20	NR	0.002-0.876	0.184	Whole	Finland		1991	17	
	Beef	20	NR	ND-10	1.5	Fat	Finland		1991	17	
	Pork	20	NR	ND-4.13	0.63	Fat	Finland		1991	17	
	Milk	3	3	1.4-4.9	3.67	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	4.1-4.9	4.53	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	4.5-6.9	5.4	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Eggs	3	3	1.2-1.8	1.4	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken	3	3	1.5-8.2	4.37	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken Liver	3	3	5.3-6.8	5.97	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Ground Beef	3	3	2.9-12	6.97	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	3	8.8-15	11.6	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	5.03	Fat	Various U.S. Sites	Background	1996	21	
	Pork	78	43	NR	10.2	Fat	Various U.S. Sites	Background	1995	22	
	Young Chicken	39	39	NR	1.53	Fat	Various U.S. Sites	Background	1996	23	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8-HpCDD	Light Fowl	12	12	NR	0.93	Fat	Various U.S. Sites	Background	1996	23	
(continued)	Heavy Fowl	12	11	NR	2.04	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	13	NR	0.54	Fat	Various U.S. Sites	Background	1996	23	
	Eggs	3	NR	NR	2.74	Whole	Various U.S. Sites		1995	24	
	Milk	538	NR	0 - 12	0.89	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0.22 - 2.1	0.69	Fat	Germany		93-96	25	official food inspection
	Eggs	218	NR	0.55 - 277	10.2	Fat	Germany		93-96	25	official food inspection
	Meat	107	NR	0.18 - 50	2.3	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	0.18	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	0.75	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	1.04	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	0.43	Fat	Russia		1996	26	supermarkets
	Goose Fat	NR	NR	NR	0.71	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	0.06	Fat	Russia		1996	26	supermarkets
	Chicken Fat	NR	NR	NR	0.93	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	10.3	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	5.6	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	0.2	Dry	Spain		1996	27	supermarkets
	Meat	7	NR	NR	16.6	Fat	Spain		1996	27	supermarkets
	Eggs	2	NR	NR	10.2	Fat	Spain		1996	27	supermarkets

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8-HpCDD (continued)	Milk & Dairy	6	NR	NR	2.6	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	1.9	Fat	Spain		1996	27	supermarkets
	Butter	21	21	0.58 - 3.09	1.32	Fat	Spain		NR	28	supermarkets
HpCDDs	Chicken fat	26	16	ND-142	52	Fat	Canada		1980	20	
	Beef	9	NR	NR	20.9	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	NR	8.09	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	NR	17.1	Fat	Various U.S. Sites		NR	15	
	Eggs	3	NR	NR	6.04	Whole	Various U.S. Sites		1995	24	
	Butter	21	21	0.58 - 5.51	1.65	Fat	Spain		NR	28	supermarkets
Octachlorodibenzo-p-dioxin (MW=460.76)											
1,2,3,4,6,7,8,9-OCDD	Food basket	3	3	1.0-2.1	1.47	Fresh	Stockholm, Sweden	Urban	NR	1	
	Milk	2	2	0.12-0.16	0.14	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.16-0.59	0.32	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	10	10	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	3.4	3.4	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	25	25	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	19	19	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	68	68	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	52	52	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	12	12	Fat	Berlin, W. Germany	Urban	NR	3	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8,9-OCDD	Milk	10	10	4.3-25.0	11.0	Fat	W. Germany		NR	5	samples not randomly selected
(continued)	Cheese	10	10	5.0-17.0	10.5	Fat	W. Germany		NR	5	
	Butter	5	5	2.0-35.0	11.6	Fat	W. Germany		NR	5	
	Beef	3	3	4.7-6.0	5.4	Fat	W. Germany		NR	5	
	Veal	4	4	3.1-69.0	22.3	Fat	W. Germany		NR	5	
	Pork	3	3	5.4-12.3	8.2	Fat	W. Germany		NR	5	
	Sheep	2	2	14.4-24.4	19.3	Fat	W. Germany		NR	5	
	Chicken	2	2	14.0-19.0	16.5	Fat	W. Germany		NR	5	
	Canned meat	2	2	17.0-122	53.0	Fat	W. Germany		NR	5	
	Lard	4	4	10.0-23.0	16.0	Fat	W. Germany		NR	5	
	Chicken fat	26	12	ND-238	90	Fat	Canada		1980	20	
	Milk	7	7	0.215-0.323	0.230[c]	Whole	England & Wales	Rural	1989	6	
	Cow cream	1	1	3.15	3.15	Wet	USSR		88-89	7	
	Beef	1	1	0.63	0.63	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	5.40	5.40	Wet	USSR		88-89	7	
	Beef fat	1	1	3.40	3.40	Wet	USSR		88-89	7	
	Pork	1	1	11.5	11.5	Wet	USSR		88-89	7	
	Butter	1	1	9.01	9.01	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.660	0.660	Wet	USSR		88-89	7	
	Sausage	1	1	5.70	5.70	Wet	Moscow, USSR		88-89	7	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8,9-OCDD (continued)	Pork sticks	1	1	9.46	9.46	Wet	South Vietnam		NR	7	
	Pork fat	1	1	29.8	29.8	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	22.8	22.8	Wet	South Vietnam		NR	7	
	Swiss cheese	1	1	0.66	0.66	Wet	USSR		88-89	7	
	Sausage	1	1	5.7	5.7	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	9.46	9.46	Wet	South Vietnam		NR	7	
	Pork fat	1	1	29.8	29.8	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	22.8	22.8	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.34	0.34	Wet	New York, NY		1990	9	
	Soft blue cheese	1	1	5.93	5.93	Wet	New York, NY		1990	9	
	Heavy cream cheese	1	1	1.54	1.54	Wet	New York, NY		1990	9	
	Soft cream cheese	1	1	1.5	1.5	Wet	New York, NY		1990	9	
	American cheese	1	1	1.6	1.6	Wet	New York, NY		1990	9	
	Beef	5	4	ND-11.40	8.58	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Beef	3	3	8.03-11.90	9.43	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Pork	5	5	13.70-254.00	77.20	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Pork	3	3	24.90-125.00	72.43	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Chicken	5	4	ND-64.00	28.97	Fat	Los Angeles	Urban	NR	10	composite 6 samples
	Chicken	3	3	2.61-96.20	35.01	Fat	San Francisco	Urban	NR	10	composite 6 samples
	Eggs	5	0	ND(0.80-1.60)	NA	Whole	Los Angeles	Urban	NR	10	composite 6 samples

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8,9-OCDD (continued)	Eggs	3	1	ND-1.30	0.63	Whole	San Francisco	Urban	NR	10	composite 6 samples
	Beef	3	3	0.414-15.825	6.167	Wet	New York, NY		1990	11	
	Pork	1	1	50.742	50.7	Wet	New York, NY		1990	11	
	Chicken	1	1	0.74	0.74	Wet	New York, NY		1990	11	
	Beef	63	13	ND-71.84	4.78	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	12	statistically-based survey
	Carcass Meat	2	2	4.6-13	8.8	Whole	United Kingdom		88-91	13	
	Offals	1	1	21	21	Whole	United Kingdom		88-91	13	
	Poultry	2	2	2.8-4.2	3.5	Whole	United Kingdom		88-91	13	
	Meat Products	2	2	13-20	16.5	Whole	United Kingdom		88-91	13	
	Milk Products	2	2	1.9-3.1	2.5	Whole	United Kingdom		88-91	13	
	Butter	4	NR	1.9-5.5	3.7	Whole	United Kingdom		88-91	13	
	Cheddar Cheese	1	1	2.4	2.4	Whole	United Kingdom		88-91	13	
	Reduced Fat Cheese	1	1	1.8	1.8	Whole	United Kingdom		88-91	13	
	Milk	9	9	1.79-3.06	2.5	Fat	Switzerland		1990	19	
	Milk	27	NR	0.41-1.05	0.63	Fat	Germany		1992	14	
	Beef	9	NR	NR	32.7	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	NR	20.2	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	NR	87.1	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	1	1.59	1.59	Whole	U.S.		NR	16	fast food

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8,9-OCDD	Pizza	1	1	4.04	4.04	Whole	U.S.		NR	16	fast food
(continued)	Fried Chicken	1	1	2.55	2.55	Whole	U.S.		NR	16	fast food
	Milk	20	NR	67-181	120	Whole	Finland		1991	17	
	Eggs	20	NR	0.087-2.38	0.677	Whole	Finland		1991	17	
	Beef	20	NR	ND-1.0	3.0	Fat	Finland		1991	17	
	Pork	20	NR	ND-8.9	2.53	Fat	Finland		1991	17	
	Milk	3	3	2.8-5.7	4.13	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Cheddar Cheese	3	3	3.7-3.9	3.77	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Butter	3	3	5.1-6.7	5.67	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Eggs	3	3	7.3-20	14.10	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken	3	3	17-54	35	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Chicken Liver	3	3	18-53	40.33	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Ground Beef	3	3	4.4-20	11.33	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Sausage	3	3	56-92	75.67	Fat	S. Mississippi	NR	1994	18	purchased from grocery store
	Milk	8	8	NR	4.89	Fat	Various U.S. Sites	Background	1996	21	
	Pork	78	49	NR	52.8	Fat	Various U.S. Sites	Background	1995	22	
	Young Chicken	39	38	NR	5.31	Fat	Various U.S. Sites	Background	1996	23	
	Light Fowl	12	12	NR	2.07	Fat	Various U.S. Sites	Background	1996	23	
	Heavy Fowl	12	12	NR	7.67	Fat	Various U.S. Sites	Background	1996	23	
	Young Turkeys	15	11	NR	0.78	Fat	Various U.S. Sites	Background	1996	23	

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Chemical	Sample Type[a]	Number Samples	Number Positive Samples	Concentration Range	Conc. Mean[b]	Wt. Basis	Location	Location Description	Sample Year	Ref. No.	Comments
1,2,3,4,6,7,8,9-OCDD	Eggs	3	NR	NR	33.10	Whole	Various U.S. Sites		1995	24	
(continued)	Milk	538	NR	0.09 - 13	1.8	Fat	Germany		93-96	25	official food inspection
	Butter	222	NR	0.75 - 4.8	1.4	Fat	Germany		93-96	25	official food inspection
	Eggs	218	NR	2.3 - 1924	72	Fat	Germany		93-96	25	official food inspection
	Meat	107	NR	1.1 - 213	11	Fat	Germany		93-96	25	official food inspection
	Beef	NR	NR	NR	1.58	Fat	Russia		1996	26	supermarkets
	Smoked Sausage	NR	NR	NR	2.78	Fat	Russia		1996	26	supermarkets
	Chicken	NR	NR	NR	2.49	Fat	Russia		1996	26	supermarkets
	Pork	NR	NR	NR	2.6	Fat	Russia		1996	26	supermarkets
	Goose Fat	NR	NR	NR	4.4	Fat	Russia		1996	26	supermarkets
	Duck Fat	NR	NR	NR	3.26	Fat	Russia		1996	26	supermarkets
	Chicken Fat	NR	NR	NR	2.63	Fat	Russia		1996	26	supermarkets
	Vegetables	2	NR	NR	111.5	Dry	Spain		1996	27	supermarkets
	Pulses & Cereals	4	NR	NR	51.7	Dry	Spain		1996	27	supermarkets
	Fruits	2	NR	NR	1.7	Dry	Spain		1996	27	supermarkets
	Meat	7	NR	NR	224.6	Fat	Spain		1996	27	supermarkets
	Eggs	2	NR	NR	61.6	Fat	Spain		1996	27	supermarkets
	Milk & Dairy	6	NR	NR	26.7	Fat	Spain		1996	27	supermarkets
	Fats & Oils	4	NR	NR	17.8	Fat	Spain		1996	27	supermarkets
1,2,3,4,6,7,8,9-OCDD	Butter	21	21	1.35 - 26.6	6.57	Fat	Spain		NR	28	supermarkets

Table B-14. Levels of Dioxins in Food Products (ppt) (continued)

Footnote references

[a] Samples were obtained from grocery stores unless stated otherwise. Milk samples were obtained from dairies or transport trucks. No cooked samples from the references were used.
[b] For ND values 1/2 LOD was used in calculating the mean. Therefore, it is possible to have mean concentrations greater than the range (e.g., reported detection limit for nondetects greater than the positive sample).
[c] For ND values the detection limit was used in calculating the mean.
[d] Value in reference was reported as total 2,3,7,8-TCDD toxic equivalents.

NR = not reported
NA = not applicable

Sources:
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27. Domingo et al. (1999)
28. Ramos et al. (1999)

Table B-15. Levels of Dibenzofurans in Food Products (ppt)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
Tetrachlorodibenzofurans (MW=305.98)											
2,3,7,8-TCDF	Food basket	3	3	0.1-0.4	2.3	Fresh	Sweden	Urban	NR	1	
	Milk	2	2	0.021-0.028	0.024	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.022-0.035	0.029	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.7	0.7	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.15	0.15	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.11	0.11	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	2.1	2.1	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	1.1	1.1	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	1	0	ND(0.001)	NA	Whole	U.S.		NR	4	
	Beef	3	1	ND-0.005	0.0032	Whole	U.S.		NR	4	
	Pork	3	3	0.013-0.020	0.015	Whole	U.S.		NR	4	
	Milk	10	NR	ND-10.0	4.1	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	NR	ND-2.6	1.1	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Beef	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Veal	4	NR	ND-0.5	0.2	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Chicken	2	2	1.2-4.0	2.6	Fat	W. Germany		NR	5	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,7,8-TCDF	Canned meat	2	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
(continued)	Lard	4	NR	ND-1.0	0.5	Fat	W. Germany		NR	5	
	Milk	7	NR	ND-0.011	0.008[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	1	0.285	0.285	Wet	USSR		88-89	7	
	Beef	1	1	0.027	0.027	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.108	0.108	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	1	0.288	0.288	Wet	USSR		88-89	7	
	Butter	1	1	0.212	0.212	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.021	0.021	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.17)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.34	0.34	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.50	0.50	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	1.9	1.9	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.02	0.02	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	0.15	0.15	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	1	0.07	0.07	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	0.07	0.07	Wet	New York, NY		1990	8	
	American cheese	1	1	0.1	0.1	Wet	New York, NY		1990	8	
	Beef	5	1	ND-0.84	0.28	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	2	ND-1.56	0.78	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(0.22-0.49)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Pork	3	0	ND(0.35-0.54)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,7,8-TCDF	Chicken	5	0	ND(0.19-0.58)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
(continued)	Chicken	3	1	ND-0.67	0.33	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.01-0.03)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	1	ND-0.01	0.01	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	3	0.01-0.051	0.029	Wet	New York, NY		1990	10	
	Pork	1	1	0.065	0.065	Wet	New York, NY		1990	10	
	Chicken	1	1	0.032	0.032	Wet	New York, NY		1990	10	
	Beef	63	0	ND	NA	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Fats & Oils	1	1	0.24	0.24	Whole	United Kingdom		88-91	12	
	Eggs	2	2	0.10-0.11	0.15	Whole	United Kingdom		88-91	12	
	Green Vegetables	2	2	0.02	0.02	Whole	United Kingdom		88-91	12	
	Other Vegetables	2	1	ND-0.13	0.14	Whole	United Kingdom		88-91	12	
	Potatoes	1	1	0.03	0.03	Whole	United Kingdom		88-91	12	
	Fresh Fruit	1	1	0.1	0.1	Whole	United Kingdom		88-91	12	
	Carcass Meat	2	2	0.13-0.32	0.23	Whole	United Kingdom		88-91	12	
	Offals	2	2	0.06	0.06	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.15-0.22	0.19	Whole	United Kingdom		88-91	12	
	Meat Products	2	2	0.07-0.14	0.11	Whole	United Kingdom		88-91	12	
	Milk Products	2	1	ND-0.02	0.04	Whole	United Kingdom		88-91	12	
	Butter	4	0	ND	NA	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.04	0.04	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	0	ND	NA	Whole	United Kingdom		88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,7,8-TCDF	Milk	9	9	0.18-0.31	0.24	Fat	Switzerland		1990	13	
(continued)	Milk	27	0	ND	NA	Fat	Germany		1992	14	
	Beef	9	NR	NR	0.488	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	NR	1.97	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	1	0.0734	0.0734	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-90	19	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.346	0.064	Whole	Finland		1991	17	
	Beef	20	NR	ND-1.42	<0.5	Fat	Finland		1991	17	
	Pork	20	NR	ND-3.02	0.74	Fat	Finland		1991	17	
	Milk	3	3	0.09-0.14	0.12	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.04-0.08	0.06	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.04-0.07	0.06	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	3	0.08-0.11	0.10	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	3	0.74-0.83	0.77	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	3	0.4-0.99	0.78	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.06-0.08	0.07	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	0.06-0.25	0.17	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	8	NR	0.08	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	1	NR	0.09	Fat	Various U.S. Sites	Background	1995	20	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Young Chickens	39	35	NR	0.28	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	9	NR	0.25	Fat	Various U.S. Sites	Background	1996	21	
2,3,7,8-TCDF	Heavy Fowl	12	11	NR	0.48	Fat	Various U.S. Sites	Background	1996	21	
(continued)	Young Turkeys	15	12	NR	0.57	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	NR	NR	0.03	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-0.62	0.08	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0-0.66	0.04	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0-32	1.5	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0.04-3.0	0.30	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	0.35	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	0.64	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	1.32	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.30	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.89	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.46	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.25	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	0.6	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	0.1	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	1.0	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	1.8	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	2.1	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	2.1	Fat	Spain		1996	25	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Fats & Oils	4	NR	NR	0.3	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-0.75	NR	Fat	Spain		NR	26	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
TCDF	Beef	9	NR	NR	0.949	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	NR	42.2	Fat	Various U.S. Sites		NR	15	
	Pork	7	NR	NR	4.7	Fat	Various U.S. Sites		NR	15	
	Eggs	3	NR	NR	0.11	Whole	Various U.S. Sites		1995	22	
	Butter	21	21	ND-3.10	1.1	Fat	Spain		1996	26	supermarkets
Pentachlorodibenzofurans (MW=340.42)											
1,2,3,7,8-PeCDF	Food basket	3	0	ND(0.1-0.4)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	2	0.020-0.021	0.020	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.020-0.036	0.028	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.2	0.2	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.09	0.09	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.01	0.01	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.01	0.01	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.01	0.01	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.01	0.01	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	NR	ND-1.3	0.3	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	NR	ND-0.3	0.2	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Beef	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Veal	4	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Sheep	2	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Chicken	2	1	ND-1.2	0.7	Fat	W. Germany		NR	5	
1,2,3,7,8-PeCDF	Canned meat	2	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
(continued)	Lard	4	NR	ND-0.3	0.2	Fat	W. Germany		NR	5	
	Milk	7	0	ND(.002-.017)	0.005[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	1	0.165	0.165	Wet	USSR		88-89	7	
	Beef	1	1	0.006	0.006	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	1	0.144	0.144	Wet	USSR		88-89	7	
	Butter	1	1	0.212	0.212	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.006	0.006	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.17)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.14	0.14	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.20	0.20	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.48	0.48	Wet	South Vietnam		NR	7	
	Cottage cheese	1	0	ND(0.003)	NA	Wet	New York, NY		1990	8	
	Soft blue cheese	1	0	ND(0.05)	NA	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	0	ND(0.04)	NA	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	0.04	0.04	Wet	New York, NY		1990	8	
	American cheese	1	0	ND(0.05)	NA	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.25-0.86)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Beef	3	0	ND(0.10-1.44)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(0.37-1.40)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	0	ND(0.28-0.58)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	0	ND(0.16-0.67)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
1,2,3,7,8-PeCDF	Chicken	3	0	ND(0.12-0.15)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
(continued)	Eggs	5	0	ND(0.03-0.10)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.01-0.02)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	1	ND-0.01	NA	Wet	New York, NY		1990	10	
	Pork	1	1	0.009	0.009	Wet	New York, NY		1990	10	
	Chicken	1	0	ND(0.006)	NA	Wet	New York, NY		1990	10	
	Beef	3	1	ND-0.01	NA	Wet	New York, NY		1990	10	
	Pork	1	1	0.009	0.009	Wet	New York, NY		1990	10	
	Chicken	1	0	ND(0.006)	NA	Wet	New York, NY		1990	10	
	Beef	63	0	ND	NA	Fat	Various U.S. SItes	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Fats & Oils	1	1	0.11	0.11	Whole	United Kingdom		88-91	12	
	Eggs	2	2	0.01-0.03	0.02	Whole	United Kingdom		88-91	12	
	Green Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Other Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Potatoes	2	0	ND	NA	Whole	United Kingdom		88-91	12	
	Fresh Fruit	2	0	ND	NA	Whole	United Kingdom		88-91	12	
	Carcass Meat	2	2	0.01-0.24	0.125	Whole	United Kingdom		88-91	12	
	Offals	1	1	0.02	0.02	Whole	United Kingdom		88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Poultry	2	2	0.03-0.04	0.035	Whole	United Kingdom		88-91	12	
	Meat Products	2	1	ND-0.01	0.0125	Whole	United Kingdom		88-91	12	
	Milk Products	2	0	ND	NA	Whole	United Kingdom		88-91	12	
	Butter	4	NR	ND-0.04	0.035	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.01	0.01	Whole	United Kingdom		88-91	12	
1,2,3,7,8-PeCDF	Reduced Fat Cheese	1	1	0.01	0.01	Whole	United Kingdom		88-91	12	
(continued)	Milk	9	9	0.06-0.16	0.09	Fat	Switzerland		1990	13	
	Milk	27	0	ND	NA	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-28	< 10	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.254	0.061	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Milk	3	0	ND(0.02)	0.02	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.02-0.03	0.03	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	1	ND-0.05	0.02	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	0	ND(0.02)	0.02	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken	3	3	0.14-0.25	0.20	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	3	0.09-0.14	0.12	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.01-004	0.02	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	0.03-0.08	0.05	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	0	NR	0.05	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	0	NR	0.45	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	5	NR	0.21	Fat	Various U.S. Sites	Background	1996	21	
1,2,3,7,8-PeCDF	Light Fowl	12	1	NR	0.18	Fat	Various U.S. Sites	Background	1996	21	
(continued)	Heavy Fowl	12	2	NR	0.14	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	4	NR	0.36	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-0.32	0.04	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0-0.66	0.03	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0-9.5	0.65	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0-1.4	0.11	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	0.31	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	0.55	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	1.62	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.27	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.56	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.44	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.98	Fat	Russia		1996	24	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Vegetables	2	NR	NR	0.6	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	0.2	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.6	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	0.9	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	1.0	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	1.5	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	0.4	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-0.32	NR	Fat	Spain		NR	26	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,4,7,8-PeCDF	Food basket	3	0	ND(0.1-0.5)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	2	0.069-0.084	0.076	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.066-0.43	0.24	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	1.4	1.4	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.45	0.45	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	1.5	1.5	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.08	0.08	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.9	0.9	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	1.5	1.5	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.8	0.8	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	10	1.7-4.6	2.7	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	10	0.9-2.5	1.7	Fat	W. Germany		NR	5	
	Butter	5	NR	ND-2.0	1.1	Fat	W. Germany		NR	5	
	Beef	3	3	1.7-3.9	2.7	Fat	W. Germany		NR	5	
	Veal	4	4	6.5-8.2	7.4	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	2	0.7-2.8	1.7	Fat	W. Germany		NR	5	
	Chicken	2	2	0.7-2.0	1.3	Fat	W. Germany		NR	5	
	Canned meat	2	2	0.3-1.3	0.8	Fat	W. Germany		NR	5	
	Lard	4	NR	ND-0.4	0.3	Fat	W. Germany		NR	5	
	Milk	7	7	0.028-0.038	0.032[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	1	1.10	1.10	Wet	USSR		88-89	7	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Beef	1	1	0.177	0.177	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.108	0.108	Wet	USSR		88-89	7	
2,3,4,7,8-PeCDF	Beef fat	1	1	0.204	0.204	Wet	USSR		88-89	7	
(continued)	Pork	1	1	0.504	0.504	Wet	USSR		88-89	7	
	Butter	1	1	1.43	1.43	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.015	0.015	Wet	USSR		88-89	7	
	Sausage	1	1	0.171	0.171	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.27	0.27	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.99	0.99	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.02	0.02	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	0.25	0.25	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	0.18	0.18	Wet	New York, NY		1990	8	
	American cheese	1	1	0.07	0.07	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.22-0.78)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.28-1.31)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(0.33-1.28)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	0	ND(0.26-0.53)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	0	ND(0.15-0.60)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.11-0.14)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.01-0.07)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.02-0.02)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Beef	3	3	0.03-1.783	0.626	Wet	New York, NY		1990	10	
	Pork	1	1	0.039	0.039	Wet	New York, NY		1990	10	
	Chicken	1	1	0.01	0.01	Wet	New York, NY		1990	10	
2,3,4,7,8-PeCDF (continued)	Beef	63	4	ND-1.09	0.36	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	2	2	0.18-0.39	0.29	Whole	United Kingdom		88-91	12	
	Offals	2	2	0.09-0.71	0.40	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.05-0.08	0.065	Whole	United Kingdom		88-91	12	
	Meat Products	2	2	0.09-0.12	0.105	Whole	United Kingdom		88-91	12	
	Milk Products	2	2	0.04-0.15	0.095	Whole	United Kingdom		88-91	12	
	Butter	4	NR	0.78-0.99	0.89	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.1	0.1	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	1	0.07	0.07	Whole	United Kingdom		88-91	12	
	Fats & Oils	2	1	ND-0.55	0.37	Whole	United Kingdom	Rural	88-91	12	
	Eggs	2	1	0.05-0.10	0.075	Whole	United Kingdom		88-91	12	
	Green Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Other Vegetables	2	1	ND-0.04	0.0275	Whole	United Kingdom		88-91	12	
	Potatoes	1	1	0.02	0.02	Whole	United Kingdom		88-91	12	
	Fresh Fruit	2	1	ND-0.02	0.0175	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.69-1.54	1.13	Fat	Switzerland		1990	13	
	Milk	27	NR	0.4-0.88	0.66	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	NR	2.6	Fat	Various U.S. Sites		NR	15	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
2,3,4,7,8-PeCDF	Milk	20	NR	ND-81	14	Whole	Finland		1991	17	
(continued)	Eggs	20	NR	ND-0.112	0.016	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	NR	NR	0.3	Fat	Finland		1991	17	
	Milk	3	3	0.1-0.08	0.15	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.23-0.36	0.31	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.17-0.34	0.25	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	1	ND-0.08	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	3	0.18-0.24	0.22	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	3	0.23-0.35	0.27	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.17-0.26	0.21	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	0.08-0.18	0.12	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	8	NR	0.28	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	7	NR	0.56	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	5	NR	0.25	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	3	NR	0.22	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	4	NR	0.18	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	9	NR	0.53	Fat	Various U.S. Sites	Background	1996	21	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0.22-3.1	0.62	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0.18-2.5	0.59	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0.09-17	1.1	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0.02-2.0	0.40	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	0.48	Fat	Russia		1996	24	supermarkets
2,3,4,7,8-PeCDF	Smoked Sausage	NR	NR	NR	0.51	Fat	Russia		1996	24	supermarkets
(continued)	Chicken	NR	NR	NR	0.68	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.39	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.71	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.63	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	1.3	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	0.7	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	0.2	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.5	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	0.7	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	0.5	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	1.5	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	0.1	Fat	Spain		1996	25	supermarkets
	Butter	21	20	ND-2.06	0.86	Fat	Spain		NR	26	supermarkets
PeCDFs	Cottage cheese	1	1	0.3	0.03	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	5	5	Wet	New York, NY		1990	8	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Heavy Cream cheese	1	1	2	2	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	2	2	Wet	New York, NY		1990	8	
	American cheese	1	1	2	2	Wet	New York, NY		1990	8	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	NR	NR	30.8	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Eggs	3	0	NR	0.12	Whole	Various U.S. Sites		1996	22	
	Butter	21	21	0.50-9.58	1.72	Fat	Spain		NR	26	supermarkets
Hexachlorodibenzofurans (MW=374.87)											
1,2,3,4,7,8-HxCDF	Milk	2	2	0.017-0.020	0.018	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.026-0.13	0.075	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.9	0.9	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.43	0.43	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.8	0.8	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.15	0.15	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.9	0.9	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.4	0.4	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	10	0.7-3.0	1.7	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	NR	ND-2.6	0.8	Fat	W. Germany		NR	5	
	Butter	5	NR	ND-1.0	0.7	Fat	W. Germany		NR	5	
	Beef	3	NR	ND-1.1	0.7	Fat	W. Germany		NR	5	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Veal	4	4	1.8-6.0	2.9	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	1	ND-1.4	0.8	Fat	W. Germany		NR	5	
	Chicken	2	1	ND-1.9	1.0	Fat	W. Germany		NR	5	
	Canned meat	2	2	0.6-0.9	0.8	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Milk	7	7	0.013-0.026	0.017[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	1	1.05	1.05	Wet	USSR		88-89	7	
	Beef	1	1	0.141	0.141	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.108	0.108	Wet	USSR		88-89	7	
1,2,3,4,7,8-HxCDF	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
(continued)	Pork	1	1	0.432	0.432	Wet	USSR		88-89	7	
	Butter	1	1	2.01	2.01	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.009	0.009	Wet	USSR		88-89	7	
	Sausage	1	1	0.171	0.171	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.27	0.27	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.79	0.79	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.48	0.48	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.06	0.06	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	0.93	0.93	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	1	0.47	0.47	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	0.43	0.43	Wet	New York, NY		1990	8	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	American cheese	1	1	0.36	0.36	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.38-1.19)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.35-0.79)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(0.49-3.40)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	0	ND(0.40-3.33)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	0	ND(0.35-0.59)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.51-0.71)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.14-0.25)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.04-0.09)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	3	0.066-4.846	1.69	Wet	New York, NY		1990	10	
	Pork	1	1	0.108	0.108	Wet	New York, NY		1990	10	
	Chicken	1	1	0.009	0.009	Wet	New York, NY		1990	10	
1,2,3,4,7,8-HxCDF (continued)	Beef	63	8	ND-4.29	0.55	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	2	2	0.1-0.37	0.235	Whole	United Kingdom		88-91	12	
	Offals	2	1	ND-0.40	0.22	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.06-0.08	0.07	Whole	United Kingdom		88-91	12	
	Meat Products	2	2	0.06-0.14	0.1	Whole	United Kingdom		88-91	12	
	Milk Products	2	1	ND-0.02	0.0125	Whole	United Kingdom		88-91	12	
	Butter	4	NR	0.43-0.48	0.455	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.5	0.5	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	1	0.5	0.5	Whole	United Kingdom		88-91	12	
	Fats & Oils	2	1	ND-0.21	0.17	Whole	United Kingdom	Rural	88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Eggs	2	2	0.04-0.09	0.065	Whole	United Kingdom		88-91	12	
	Green Vegetables	2	1	ND-0.01	0.0075	Whole	United Kingdom		88-91	12	
	Other Vegetables	2	1	ND-0.05	0.04	Whole	United Kingdom		88-91	12	
	Potatoes	1	1	0.01	0.01	Whole	United Kingdom		88-91	12	
	Fresh Fruit	2	1	ND-0.03	0.02	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.42-0.73	0.56	Fat	Switzerland		1990	13	
	Milk	27	NR	0.22-0.47	0.31	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
1,2,3,4,7,8-HxCDF (continued)	Milk	20	NR	ND-63	21	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.302	0.083	Whole	Finland		1991	17	
	Beef	20	NR	ND	NA	Fat	Finland		1991	17	
	Pork	20	NR	ND-0.9	0.27	Fat	Finland		1991	17	
	Milk	3	3	0.12-0.35	0.25	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.45-0.48	0.52	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.28-0.57	0.46	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	1	ND-0.14	0.07	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	3	0.21-0.22	0.21	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken Liver	3	3	0.32-0.5	0.4	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.38-0.81	0.55	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	0.14-1.2	0.62	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	8	NR	0.39	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	15	NR	0.98	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	5	NR	0.23	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	2	NR	0.16	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	3	NR	0.17	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	8	NR	0.32	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	0	NR	0.67	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0.10-1.9	0.32	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0.06-0.76	0.29	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0.08-10	0.91	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0.03-2.1	0.28	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	24	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8-HxCDF	Smoked Sausage	NR	NR	NR	0.7	Fat	Russia		1996	24	supermarkets
(continued)	Chicken	NR	NR	NR	1.24	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.28	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.47	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.49	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.74	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	3.3	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	1.0	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.5	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	2.1	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	2.0	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	2.0	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	0.6	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-0.93	NR	Fat	Spain		NR	26	supermarkets
1,2,3,6,7,8-HxCDF	Food basket	3	0	ND(0.1-0.8)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	2	0.021-0.028	0.024	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.018-0.19	0.090	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.8	0.8	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.44	0.44	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.07	0.07	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	1.2	1.2	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken	1	1	0.4	0.4	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	3	
1,2,3,6,7,8-HxCDF	Milk	10	10	0.5-2.0	1.1	Fat	W. Germany		NR	5	samples not randomly selected
(continued)	Cheese	10	NR	ND-0.9	0.5	Fat	W. Germany		NR	5	
	Butter	5	NR	ND-1.0	0.7	Fat	W. Germany		NR	5	
	Beef	3	NR	ND-0.9	0.5	Fat	W. Germany		NR	5	
	Veal	4	4	1.3-5.0	2.4	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	1	ND-1.0	0.6	Fat	W. Germany		NR	5	
	Chicken	2	2	0.3-0.8	0.5	Fat	W. Germany		NR	5	
	Canned meat	2	1	ND-0.7	0.5	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Milk	7	7	0.009-0.017	0.012[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	1	0.240	0.240	Wet	USSR		88-89	7	
	Beef	1	1	0.030	0.030	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.108	0.108	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	1	0.144	0.144	Wet	USSR		88-89	7	
	Butter	1	1	0.424	0.424	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.009	0.009	Wet	USSR		88-89	7	
	Sausage	1	1	0.171	0.171	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.14	0.14	Wet	South Vietnam		NR	7	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Pork fat	1	1	0.40	0.40	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.38	0.38	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.02	0.02	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	0.34	0.34	Wet	New York, NY		1990	8	
1,2,3,6,7,8-HxCDF	Heavy Cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	8	
(continued)	Soft cream cheese	1	1	0.18	0.18	Wet	New York, NY		1990	8	
	American cheese	1	1	0.1	0.1	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.37-1.17)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.35-0.77)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(0.48-0.81)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	0	ND(0.39-0.84)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	0	ND(0.35-0.56)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.14-0.70)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.14-0.31)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.04-0.05)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	3	ND-0.199	NA	Wet	New York	1990	1990	10	
	Pork	1	1	0.031	0.031	Wet	New York		1990	10	
	Chicken	1	1	0.008	0.008	Wet	New York		1990	10	
	Beef	63	7	ND-1.96	0.40	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	2	2	0.05-0.36	0.205	Whole	United Kingdom		88-91	12	
	Offals	2	1	ND-0.42	0.23	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.03-0.05	0.04	Whole	United Kingdom		88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Meat Products	2	2	0.02-0.08	0.05	Whole	United Kingdom		88-91	12	
	Milk Products	1	1	0.02	0.02	Whole	United Kingdom		88-91	12	
	Butter	4	NR	0.4-0.5	0.45	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	1	0.04	0.04	Whole	United Kingdom		88-91	12	
	Fats & Oils	2	1	ND-0.2	0.148	Whole	United Kingdom	Rural	88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,6,7,8-HxCDF	Eggs	2	2	0.02-0.05	0.035	Whole	United Kingdom		88-91	12	
(continued)	Green Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Other Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Potatoes	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Fresh Fruit	2	1	ND-0.01	0.008	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.35-0.81	0.51	Fat	Switzerland		1990	13	
	Milk	27	NR	0.20-0.54	0.26	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-65	22	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.295	0.087	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	NR	ND-1.0	0.28	Fat	Finland		1991	17	
	Milk	3	3	0.12-0.34	0.23	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.26-0.39	0.32	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.28-0.42	0.34	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	1	ND-0.08	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	3	0.05-0.08	0.07	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken Liver	3	3	0.09-0.22	0.17	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,6,7,8-HxCDF	Ground Beef	3	3	0.2-0.39	0.28	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
(continued)	Sausage	3	3	0.08-0.21	0.16	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	8	NR	0.25	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	12	NR	0.58	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	5	NR	0.20	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	2	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	1	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	1	NR	0.17	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	0	NR	0.77	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-1.3	0.26	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0.06-0.69	0.25	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0.05-5.5	0.53	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0.02-1.7	0.17	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	0.38	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	0.81	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.17	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.25	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.24	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.51	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	0.9	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	0.5	Dry	Spain		1996	25	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Fruits	2	NR	NR	0.4	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	0.7	Fat	Spain		1996	25	supermarkets
1,2,3,6,7,8-HxCDF	Eggs	2	NR	NR	0.4	Fat	Spain		1996	25	supermarkets
(continued)	Milk & Dairy	6	NR	NR	0.8	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	0.4	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-0.94	NR	Fat	Spain		NR	26	supermarkets
1,2,3,7,8,9-HxCDF	Food basket	3	0	ND(0.1-0.3)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	7	0	ND(.002-.012)	0.008[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	0	ND(0.04)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.01)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.11)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.14)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.16)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	0	ND(0.01)	NA	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.11)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	0	ND(0.1)	NA	Wet	South Vietnam		NR	7	
	Pork fat	1	0	ND(0.2)	NA	Wet	South Vietnam		NR	7	
	Chicken fat	1	0	ND(0.19)	NA	Wet	South Vietnam		NR	7	
	Cottage cheese	1	0	ND(0.006)	NA	Wet	New York, NY		1990	8	
	Soft blue cheese	1	0	ND(0.1)	NA	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	0	ND(0.04)	NA	Wet	New York, NY		1990	8	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Soft cream cheese	1	0	ND(0.04)	NA	Wet	New York, NY		1990	8	
	American cheese	1	0	ND(0.05)	NA	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.48-1.51)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.45-1.01)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
1,2,3,7,8,9-HxCDF	Pork	5	0	ND(0.62-1.06)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
(continued)	Pork	3	0	ND(0.51-1.09)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	0	ND(0.45-0.75)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.18-0.91)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.18-0.58)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.05-0.06)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.002-0.01)	NA	Wet	New York, NY		1990	10	
	Pork	1	0	ND(0.007)	NA	Wet	New York, NY		1990	10	
	Chicken	1	0	ND(0.012)	NA	Wet	New York, NY		1990	10	
	Beef	63	0	ND	NA	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	1	1	0.36	0.36	Whole	United Kingdom		88-91	12	
	Offals	1	1	0.01	0.01	Whole	United Kingdom		88-91	12	
	Butter	4	NR	ND-0.02	0.02	Whole	United Kingdom		88-91	12	
	Fats & Oils	2	0	ND	NA	Whole	United Kingdom	Rural	88-91	12	
	Eggs	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.02-0.06	0.03	Fat	Switzerland		1990	13	
	Milk	27	0	ND	NA	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,7,8,9-HxCDF	Milk	20	0	ND	NA	Whole	Finland		1991	17	
(continued)	Eggs	20	0	ND	NA	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Milk	3	0	ND(0.03)	0.03	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	0	ND(0.01-0.02)	0.01	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	0	ND(0.01-0.02)	0.02	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	0	ND(0.03-0.04)	0.03	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	1	ND-0.07	0.05	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	0	ND(0.03-0.04)	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.01-0.02	0.02	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	0.06-0.15	0.1	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	0	NR	0.05	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	0	NR	0.45	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	0	NR	0.63	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-0.11	0.01	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0-0.29	0.01	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0-0.62	0.03	Fat	Germany		93-96	23	official food inspection

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Meat	107	NR	0-0.12	0.02	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	24	supermarkets
1,2,3,7,8,9-HxCDF	Smoked Sausage	NR	NR	NR	0.42	Fat	Russia		1996	24	supermarkets
(continued)	Chicken	NR	NR	NR	0.94	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.16	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.20	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.17	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.44	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	0.9	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	0.3	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.06	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	0.1	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	0.1	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	0.2	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	ND	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-3.1	NR	Fat	Spain		NR	26	supermarkets
2,3,4,6,7,8-HxCDF	Food basket	3	0	ND(0.1-0.5)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	1	ND-0.020	0.015	Whole	Switzerland	Background	NR	2	
	Milk	4	4	0.018-0.28	0.12	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.7	0.7	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.31	0.31	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	1.3	1.3	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Pork	1	1	0.05	0.05	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	1.5	1.5	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	1.7	1.7	Fat	Berlin, W. Germany	Urban	NR	3	
2,3,4,6,7,8-HxCDF	Milk	10	10	0.7-2.2	1.3	Fat	W. Germany		NR	5	samples not randomly selected
(continued)	Cheese	10	NR	ND-1.1	0.7	Fat	W. Germany		NR	5	
	Butter	5	NR	ND-1.0	0.7	Fat	W. Germany		NR	5	
	Beef	3	NR	ND-1.5	0.9	Fat	W. Germany		NR	5	
	Veal	4	4	1.7-5.0	2.8	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	1	ND-0.9	0.5	Fat	W. Germany		NR	5	
	Chicken	2	1	ND-1.2	0.7	Fat	W. Germany		NR	5	
	Canned meat	2	1	ND-0.6	0.4	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Milk	7	7	0.007-0.017	0.012[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	1	0.060	0.060	Wet	USSR		88-89	7	
	Beef	1	1	0.009	0.009	Wet	USSR		88-89	7	
	Cheese w/butter	1	1	0.072	0.072	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	1	0.144	0.144	Wet	USSR		88-89	7	
	Butter	1	1	0.159	0.159	Wet	USSR		88-89	7	
	Swiss cheese	1	1	0.006	0.006	Wet	USSR		88-89	7	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Sausage	1	1	0.114	0.114	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.10	0.10	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.20	0.20	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.19	0.19	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.01	0.01	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	0.15	0.15	Wet	New York, NY		1990	8	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,4,6,7,8-HxCDF	Heavy Cream cheese	1	1	0.11	0.11	Wet	New York, NY		1990	8	
(continued)	Soft cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	8	
	American cheese	1	1	0.07	0.07	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.44-1.39)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.41-0.92)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(0.57-0.97)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	0	ND(0.47-1.00)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	0	ND(0.41-0.69)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.17-0.84)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.16-0.52)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.04-0.05)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	3	0.01-0.177	0.075	Wet	New York, NY		1990	10	
	Pork	1	1	0.019	0.019	Wet	New York, NY		1990	10	
	Chicken	1	0	ND(0.01)	NA	Wet	New York, Ny		1990	10	
	Beef	63	5	ND-1.75	0.39	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	2	2	0.07-0.38	0.225	Whole	United Kingdom		88-91	12	
	Offals	1	1	0.42	0.42	Whole	United Kingdom		88-91	12	
	Poultry	2	1	ND-0.05	0.035	Whole	United Kingdom		88-91	12	
	Meat Products	2	0	ND	NA	Whole	United Kingdom		88-91	12	
	Milk Products	2	1	ND-0.01	0.02	Whole	United Kingdom		88-91	12	
	Butter	4	NR	0.38-0.47	0.43	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.04	0.04	Whole	United Kingdom		88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,4,6,7,8-HxCDF	Reduced Fat Cheese	1	1	0.03	0.03	Whole	United Kingdom		88-91	12	
(continued)	Fats & Oils	2	0	ND	NA	Whole	United Kingdom	Rural	88-91	12	
	Eggs	2	2	0.02-0.04	0.03	Whole	United Kingdom		88-91	12	
	Green Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Potatoes	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.39-0.98	0.61	Fat	Switzerland		1990	13	
	Milk	27	NR	ND-0.33	0.22	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-69	20	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.4	0.127	Whole	Finland		1991	17	
	Beef	20	NR	ND	NA	Fat	Finland		1991	17	
	Pork	20	NR	ND	NA	Fat	Finland		1991	17	
	Milk	3	3	0.11-0.28	0.19	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.09-0.4	0.21	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.18-0.25	0.22	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	1	ND-0.06	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	2	ND-0.08	0.07	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken Liver	3	2	ND-0.29	0.2	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
2,3,4,6,7,8-HxCDF	Ground Beef	3	3	0.18-0.3	0.24	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
(continued)	Sausage	3	3	0.08-0.45	0.22	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	8	NR	0.28	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	9	NR	0.57	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	6	NR	0.21	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	2	NR	0.14	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	2	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	2	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	0	NR	0.56	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-1.4	0.24	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0-0.63	0.23	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0.04-5.8	0.47	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0.02-0.72	0.15	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	ND	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	0.66	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	1.22	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.19	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.28	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.22	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.62	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	ND	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	ND	Dry	Spain		1996	25	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Fruits	2	NR	NR	0.05	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	ND	Fat	Spain		1996	25	supermarkets
2,3,4,6,7,8-HxCDF	Eggs	2	NR	NR	ND	Fat	Spain		1996	25	supermarkets
(continued)	Milk & Dairy	6	NR	NR	ND	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	ND	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-1.27	NR	Fat	Spain		NR	26	supermarkets
HxCDF	Beef	9	NR	NR	1.13	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Eggs	3	0	NR	0.62	Whole	Various U.S. Sites		1995	22	
	Butter	21	21	ND-5.56	NR	Dry	Spain		NR	26	supermarkets
Heptachlorodibenzofuran(MW=409.31)											
1,2,3,4,6,7,8-HpCDF	Food basket	3	0	ND(0.2-0.9)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	1	ND-0.12	0.08	Whole	Switzerland	Background	NR	2	
	Milk	4	3	ND-0.49	0.25	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	0.5	0.5	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.34	0.34	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	2.2	2.2	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	1.1	1.1	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	8.1	8.1	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.8	0.8	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Milk	10	10	0.2-6.0	1.5	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	NR	ND-1.1	0.5	Fat	W. Germany		NR	5	
	Butter	5	NR	ND-1.0	0.3	Fat	W. Germany		NR	5	
	Beef	3	NR	ND-5.1	2.0	Fat	W. Germany		NR	5	
1,2,3,4,6,7,8-HpCDF	Veal	4	4	0.7-4.0	1.7	Fat	W. Germany		NR	5	
(continued)	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	2	0.6-1.4	1.0	Fat	W. Germany		NR	5	
	Chicken	2	2	0.5-0.5	0.5	Fat	W. Germany		NR	5	
	Canned meat	2	2	0.9-1.9	1.2	Fat	W. Germany		NR	5	
	Lard	4	NR	ND-0.5	0.2	Fat	W. Germany		NR	5	
	Milk	7	0	ND(.007-.067)	0.020[c]	Whole	England & Wales	Rural	89	6	
	Cow cream	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.18)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.26)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.10	0.10	Wet	South Vietnam		NR	7	
	Pork fat	1	1	0.40	0.40	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.38	0.38	Wet	South Vietnam		NR	7	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Cottage cheese	1	1	0.1	0.1	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	1.76	1.76	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	1	0.6	0.6	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	0.58	0.58	Wet	New York, NY		1990	8	
	American cheese	1	1	0.52	0.52	Wet	New York, NY		1990	8	
	Beef	5	3	ND-1.15	0.96	Fat	Los Angeles	Urban	NR	9	composite 6 samples
1,2,3,4,6,7,8-HpCDF	Beef	3	1	ND-0.67	0.74	Fat	San Francisco	Urban	NR	9	composite 6 samples
(continued)	Pork	5	4	ND-10.60	4.05	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	3	2.09-5.68	3.55	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	5	1.57-24.60	7.00	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	1	ND-1.01	0.51	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Eggs	5	0	ND(0.06-0.77)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	1	ND-0.07	0.05	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	3	0.018-2.702	1	Wet	New York, NY		1990	10	
	Pork	1	1	1.251	1.251	Wet	New York, NY		1990	10	
	Chicken	1	1	0.024	0.024	Wet	New York, NY		1990	10	
	Beef	63	14	ND-10.11	1.00	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	2	2	0.12-0.5	0.31	Whole	United Kingdom		88-91	12	
	Offals	2	2	2.5-5.2	3.9	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.72-1.5	1.1	Whole	United Kingdom		88-91	12	
	Meat Products	2	2	0.1-0.34	0.22	Whole	United Kingdom		88-91	12	
	Milk Products	2	1	ND-0.04	0.098	Whole	United Kingdom		88-91	12	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Butter	4	NR	0.32-0.33	0.325	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.10	0.10	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	1	0.06	0.06	Whole	United Kingdom		88-91	12	
	Fats & Oils	2	1	ND-0.61	0.55	Whole	United Kingdom		88-91	12	
	Eggs	2	2	0.10-0.12	0.11	Whole	United Kingdom		88-91	12	
	Green Vegetables	2	2	0.03-0.04	0.035	Whole	United Kingdom		88-91	12	
	Other Vegetables	2	2	0.16-0.26	0.21	Whole	United Kingdom		88-91	12	
1,2,3,4,6,7,8-HpCDF	Potatoes	2	2	0.03-0.15	0.09	Whole	United Kingdom		88-91	12	
(continued)	Fresh Fruit	2	2	0.03-0.09	0.06	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.20-0.53	0.36	Fat	Switzerland		1990	13	
	Milk	27	NR	ND-0.23	< 0.02	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-390	50	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.282	0.069	Whole	Finland		1991	17	
	Beef	20	NR	ND	NA	Fat	Finland		1991	17	
	Pork	20	NR	ND	NA	Fat	Finland		1991	17	
	Milk	3	0	ND(0.29-1.00)	0.73	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Cheddar Cheese	3	3	0.55-0.93	0.68	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.74-1.3	1.01	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	3	0.18-0.33	0.25	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	3	0.21-2.9	1.25	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	3	0.63-0.99	0.78	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.88-2.7	1.63	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	3.3-4.3	3.83	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	8	NR	0.83	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	45	NR	3.56	Fat	Various U.S. Sites	Background	1995	20	
1,2,3,4,6,7,8-HpCDF	Young Chickens	39	19	NR	0.27	Fat	Various U.S. Sites	Background	1996	21	
(continued)	Light Fowl	12	4	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	4	NR	0.20	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	2	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	NR	NR	0.28	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-2.9	0.20	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0.02-0.45	0.17	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0.06-36	1.5	Fat	Germany		93-96	23	official food inspection
	Meat	107	NR	0.03-7.2	0.45	Fat	Germany		93-96	23	official food inspection
	Beef	NR	NR	NR	1.32	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	0.87	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	1.92	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.42	Fat	Russia		1996	24	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Goose Fat	NR	NR	NR	0.54	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.47	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	1.15	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	23.5	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	5.6	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.2	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	1.9	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	0.9	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	1.1	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	0.8	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-1.33	NR	Fat	Spain		NR	26	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
1,2,3,4,7,8,9-HpCDF	Food basket	3	0	ND(0.3-1.6)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	7	0	ND(0.01-.067)	0.026[c]	Whole	England & Wales	Rural	1989	6	
	Cow cream	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Cheese w/butter	1	0	ND(0.18)	NA	Wet	USSR		88-89	7	
	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.26)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	0	ND(0.07)	NA	Wet	South Vietnam		NR	7	
	Pork fat	1	0	ND(0.3)	NA	Wet	South Vietnam		NR	7	
	Chicken fat	1	0	ND(0.19)	NA	Wet	South Vietnam		NR	7	
	Cottage cheese	1	0	ND(0.03)	NA	Wet	New York, NY		1990	8	
	Soft blue cheese	1	0	ND(0.34)	NA	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	1	0.14	0.14	Wet	New York, NY		1990	8	
	Soft cream cheese	1	0	ND(0.18)	NA	Wet	New York, NY		1990	8	
	American cheese	1	0	ND(0.12)	NA	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.37-3.28)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.78-2.37)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	0	ND(2.22-5.40)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	0	ND(1.63-3.12)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken	5	0	ND(0.47-4.10)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.45-0.75)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
1,2,3,4,7,8,9-HpCDF	Eggs	5	0	ND(0.09-1.10)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
(continued)	Eggs	3	0	ND(0.04-0.18)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	2	ND-0.118	NA	Wet	New York, NY		1990	10	
	Pork	1	1	0.097	0.097	Wet	New York, NY		1990	10	
	Chicken	1	0	ND(0.01)	NA	Wet	New York, NY		1990	10	
	Beef	63	0	ND	NA	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	1	1	0.41	0.41	Whole	United Kingdom		88-91	12	
	Offals	2	2	0.1-0.13	0.115	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.02-0.1	0.06	Whole	United Kingdom		88-91	12	
	Meat Products	1	1	0.03	0.03	Whole	United Kingdom		88-91	12	
	Milk Products	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Butter	2	0	ND	NA	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	1	0.02	0.02	Whole	United Kingdom		88-91	12	
	Fats & Oils	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Other Vegetables	1	0	ND	NA	Whole	United Kingdom		88-91	12	
	Potatoes	2	0	ND	NA	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.04-0.09	0.05	Fat	Switzerland		1990	13	
	Milk	27	0	ND	NA	Fat	Germany		1992	14	
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
1,2,3,4,7,8,9-HpCDF	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
(continued)	Fried Chicken	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Milk	20	NR	ND-97	25	Whole	Finland		1991	17	
	Eggs	20	0	ND	NA	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Milk	3	0	ND(0.03-0.04)	0.03	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.04-0.09	0.05	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	1	ND-0.07	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	0	ND(0.03-0.07)	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	2	ND-0.04	0.04	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	3	0.1-0.15	0.13	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.04-0.09	0.07	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	0.06-0.2	0.12	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	0	NR	0.05	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	10	NR	0.57	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	4	NR	0.17	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Heavy Fowl	12	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Young Turkeys	15	0	NR	0.15	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	NR	NR	0.12	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-0.61	0.02	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0-0.21	0.02	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0-5.8	0.19	Fat	Germany		93-96	23	official food inspection
1,2,3,4,7,8,9-HpCDF	Meat	107	NR	0-0.71	0.06	Fat	Germany		93-96	23	official food inspection
(continued)	Beef	NR	NR	NR	ND	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	0.54	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	0.74	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.13	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.15	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.13	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	0.48	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	2.2	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	0.6	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.2	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	0.5	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	0.5	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	0.4	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	ND	Fat	Spain		1996	25	supermarkets
	Butter	21	21	ND-0.63	NR	Fat	Spain		NR	26	supermarkets
HpCDF	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Eggs	3	NR	NR	1.1	Whole	Various U.S. Sites		1995	22	
	Butter	21	21	0.36-8.85	1.72	Fat	Spain		NR	26	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
Octachlorodibenzofurans (MW=444.76)											
1,2,3,4,6,7,8,9-OCDF	Food basket	3	0	ND(0.4-2.1)	NA	Fresh	Sweden	Urban	NR	1	
	Milk	2	1	ND-0.20	0.12	Whole	Switzerland	Background	NR	2	
	Milk	4	1	ND-0.52	0.19	Whole	Switzerland	Industrial	NR	2	near incinerators
	Milk	1	1	1	1	Fat	W. Germany		NR	3	composite from 8 trucks
	Butter	1	1	0.25	0.25	Fat	Berlin, W. Germany	Urban	NR	3	
	Beef fat	1	1	0.2	0.2	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Pork	1	1	0.41	0.41	Fat	Berlin, W. Germany	Urban	NR	3	
	Sheep fat	1	1	0.3	0.3	Fat	Berlin, W. Germany	Urban	NR	3	from slaughterhouse
	Chicken	1	1	0.6	0.6	Fat	Berlin, W. Germany	Urban	NR	3	
	Eggs	1	1	0.2	0.2	Fat	Berlin, W. Germany	Urban	NR	3	
	Milk	10	NR	ND-4.3	1.2	Fat	W. Germany		NR	5	samples not randomly selected
	Cheese	10	10	0.4-4.2	1.2	Fat	W. Germany		NR	5	
	Butter	5	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Beef	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Veal	4	NR	ND-5.0	1.4	Fat	W. Germany		NR	5	
	Pork	3	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Sheep	2	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Chicken	2	2	0.6-1.5	1.0	Fat	W. Germany		NR	5	
	Canned meat	2	2	0.3-2.7	1.3	Fat	W. Germany		NR	5	
	Lard	4	0	ND(0.3)	NA	Fat	W. Germany		NR	5	
	Milk	7	7	0.023-0.071	0.041[c]	Whole	England & Wales	Rural	89	6	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Cow cream	1	0	ND(0.07)	NA	Wet	USSR		88-89	7	
	Beef	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
1,2,3,4,6,7,8,9-OCDF	Cheese w/butter	1	0	ND(0.18)	NA	Wet	USSR		88-89	7	
(continued)	Beef fat	1	0	ND(0.17)	NA	Wet	USSR		88-89	7	
	Pork	1	0	ND(0.36)	NA	Wet	USSR		88-89	7	
	Butter	1	0	ND(0.26)	NA	Wet	USSR		88-89	7	
	Swiss cheese	1	0	ND(0.02)	NA	Wet	USSR		88-89	7	
	Sausage	1	0	ND(0.29)	NA	Wet	Moscow, USSR		88-89	7	
	Pork sticks	1	1	0.10	0.10	Wet	South Vietnam		NR	7	
	Pork fat	1	0	ND(0.3)	NA	Wet	South Vietnam		NR	7	
	Chicken fat	1	1	0.57	0.57	Wet	South Vietnam		NR	7	
	Cottage cheese	1	1	0.06	0.06	Wet	New York, NY		1990	8	
	Soft blue cheese	1	1	1.08	1.08	Wet	New York, NY		1990	8	
	Heavy Cream cheese	1	1	0.29	0.29	Wet	New York, NY		1990	8	
	Soft cream cheese	1	1	0.29	0.29	Wet	New York, NY		1990	8	
	American cheese	1	1	0.3	0.03	Wet	New York, NY		1990	8	
	Beef	5	0	ND(0.48-5.31)	NA	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Beef	3	0	ND(0.45-2.15)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Pork	5	4	ND-9.36	2.90	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Pork	3	1	ND-1.89	1.20	Fat	San Francisco	Urban	NR	9	composite 6 samples
	Chicken	5	2	ND-26.00	6.64	Fat	Los Angeles	Urban	NR	9	composite 6 samples
	Chicken	3	0	ND(0.64-0.77)	NA	Fat	San Francisco	Urban	NR	9	composite 6 samples

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Eggs	5	0	ND(0.10-1.30)	NA	Whole	Los Angeles	Urban	NR	9	composite 6 samples
	Eggs	3	0	ND(0.05-0.21)	NA	Whole	San Francisco	Urban	NR	9	composite 6 samples
	Beef	3	3	0.018-1.073	0.381	Wet	New York, NY		1990	10	
	Pork	1	1	0.821	0.821	Wet	New York, NY		1990	10	
1,2,3,4,6,7,8,9-OCDF	Chicken	1	1	0.034	0.034	Wet	New York, NY		1990	10	
(continued)	Beef	63	0	ND	NA	Fat	Various U.S. Sites	Federally-Inspected Slaughter Houses	1994	11	statistically-based survey
	Carcass Meat	2	2	0.16-11.0	5.58	Whole	United Kingdom		88-91	12	
	Offals	1	1	1.2	1.2	Whole	United Kingdom		88-91	12	
	Poultry	2	2	0.51-0.52	0.515	Whole	United Kingdom		88-91	12	
	Meat Products	2	2	1.5-3.8	2.65	Whole	United Kingdom		88-91	12	
	Milk Products	2	1	ND-0.46	0.275	Whole	United Kingdom		88-91	12	
	Butter	4	NR	ND-0.16	0.103	Whole	United Kingdom		88-91	12	
	Cheddar Cheese	1	1	0.1	0.1	Whole	United Kingdom		88-91	12	
	Reduced Fat Cheese	1	1	0.07	0.07	Whole	United Kingdom		88-91	12	
	Fats & Oils	2	1	ND-2.3	1.34	Whole	United Kingdom		88-91	12	
	Eggs	2	2	0.03-0.05	0.04	Whole	United Kingdom		88-91	12	
	Green Vegetables	2	2	0.04	0.04	Whole	United Kingdom		88-91	12	
	Other Vegetables	2	2	0.17-0.27	0.22	Whole	United Kingdom		88-91	12	
	Potatoes	2	2	0.13-0.47	0.30	Whole	United Kingdom		88-91	12	
	Fresh Fruit	2	2	0.15-0.18	0.165	Whole	United Kingdom		88-91	12	
	Milk	9	9	0.10-0.32	0.18	Fat	Switzerland		1990	13	
	Milk	27	NR	ND-0.29	< 0.02	Fat	Germany		1992	14	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Beef	9	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Chicken	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Pork	7	0	ND	NA	Fat	Various U.S. Sites		NR	15	
	Hamburger	1	0	ND	NA	Whole	U.S.		NR	16	fast food
	Pizza	1	0	ND	NA	Whole	U.S.		NR	16	fast food
1,2,3,4,6,7,8,9-OCDF	Fried Chicken	1	1	0.385	0.385	Whole	U.S.		NR	16	fast food
(continued)	Milk	20	NR	ND-38	16	Whole	Finland		1991	17	
	Eggs	20	NR	ND-0.105	0.032	Whole	Finland		1991	17	
	Beef	20	0	ND	NA	Fat	Finland		1991	17	
	Pork	20	0	ND	NA	Fat	Finland		1991	17	
	Milk	3	0	ND(0.06-0.07)	0.06	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Cheddar Cheese	3	3	0.18-0.59	0.36	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Butter	3	3	0.23-0.61	0.42	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Eggs	3	3	0.25-0.42	0.31	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken	3	3	0.3-1.5	0.68	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Chicken Liver	3	3	0.39-1.3	0.83	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Ground Beef	3	3	0.26-0.86	0.51	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Sausage	3	3	1.2-2.3	1.63	Fat	S. Mississippi	NR	1994	18	purchased from a grocery store
	Milk	8	0	NR	0.05	Fat	Various U.S. Sites	Background	1996	19	
	Pork	78	41	NR	2.30	Fat	Various U.S. Sites	Background	1995	20	
	Young Chickens	39	5	NR	0.34	Fat	Various U.S. Sites	Background	1996	21	
	Light Fowl	12	0	NR	0.29	Fat	Various U.S. Sites	Background	1996	21	

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Chemical	Sample type[a]	Number samples	Number positive samples	Concentration range	Conc. mean[b]	Wt. basis	Location	Location description	Sample year	Ref. no.	Comments
	Heavy Fowl	12	1	NR	0.31	Fat	Various U.S. Sites	Background	1996	21	
	Young Turkeys	15	0	NR	0.29	Fat	Various U.S. Sites	Background	1996	21	
	Eggs	3	NR	NR	1.34	Whole	Various U.S. Sites		1995	22	
	Milk	538	NR	0-2.5	0.11	Fat	Germany		93-96	23	official food inspection
	Butter	222	NR	0-0.67	0.09	Fat	Germany		93-96	23	official food inspection
	Eggs	218	NR	0-46	1.8	Fat	Germany		93-96	23	official food inspection
1,2,3,4,6,7,8,9-OCDF	Meat	107	NR	0.05-6.0	0.32	Fat	Germany		93-96	23	official food inspection
(continued)	Beef	NR	NR	NR	2.5	Fat	Russia		1996	24	supermarkets
	Smoked Sausage	NR	NR	NR	1.99	Fat	Russia		1996	24	supermarkets
	Chicken	NR	NR	NR	1.57	Fat	Russia		1996	24	supermarkets
	Pork	NR	NR	NR	0.48	Fat	Russia		1996	24	supermarkets
	Goose Fat	NR	NR	NR	0.83	Fat	Russia		1996	24	supermarkets
	Duck Fat	NR	NR	NR	0.52	Fat	Russia		1996	24	supermarkets
	Chicken Fat	NR	NR	NR	1.07	Fat	Russia		1996	24	supermarkets
	Vegetables	2	NR	NR	119.5	Dry	Spain		1996	25	supermarkets
	Pulses & Cereals	4	NR	NR	42.5	Dry	Spain		1996	25	supermarkets
	Fruits	2	NR	NR	0.8	Dry	Spain		1996	25	supermarkets
	Meats	7	NR	NR	8.2	Fat	Spain		1996	25	supermarkets
	Eggs	2	NR	NR	3.7	Fat	Spain		1996	25	supermarkets
	Milk & Dairy	6	NR	NR	3.5	Fat	Spain		1996	25	supermarkets
	Fats & Oils	4	NR	NR	1.8	Fat	Spain		1996	25	supermarkets
	Butter	21	16	ND-3.18	NR	Fat	Spain		NR	26	supermarkets

Table B-15. Levels of Dibenzofurans in Food Products (ppt) (continued)

Footnote references

[a] Samples were obtained from grocery stores unless stated otherwise. Milk samples were obtained from dairies or transport trucks. No cooked samples from the references were used.
[b] For ND values 1/2 LOD was used in calculating the mean. Therefore, it is possible to have mean concentrations greater than the range (e.g., reported detection limit for nondetects greater than the positive sample).
[c] For ND values the detection limit was used in calculating the mean.

NR = not reported.
NA = not applicable.

Sources:
1. De Wit et al. (1990)
2. Rappe et al. (1987)
3. Beck et al. (1989)
4. LaFleur et al. (1990)
5. Furst et al. (1990)
6. Startin et al. (1990)
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17. Vartiainen and Hallikainen (1994)
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21. Ferrario et al. (1997)
22. Schecter et al. (1997)
23. Malisch (1998)
24. Amirova et al. (1997)
25. Domingo et al. (1999)

Table B-16. Environmental Levels of PCBs in Food (ppt)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
Tetrachloro-PCB (MW=291.99)											
77	3,3',4,4'-TCB	Beef	6	NR	0.6-38	13	Finland	Urban	NR	1	
		Pork	3	NR	1.0-24	13	Finland	Urban	NR	1	
		Poultry	2	NR	NR	8.2	Finland	Urban	NR	1	
		Inner Organs	5	NR	ND-7.9	3.2	Finland	Urban	NR	1	
		Eggs	2	NR	NR	4.1	Finland	Urban	NR	1	
		Fish Liver Oil	2	NR	NR	2,700	Finland	Urban	NR	1	
		Milk	17	NR	NR	4.0	The Netherlands	Agricultural	NR	2	
		Milk	5	NR	NR	3.3	The Netherlands	Industrial	NR	2	
		Milk	7	NR	NR	8.9	The Netherlands	Near Waste Incinerator	NR	2	
		Milk	10	NR	NR	8.4	The Netherlands	Outlying Land of Main Rivers	NR	2	
		Beef	NR	NR	NR	1	Canada	Urban	86-88	3	
		Butter	NR	NR	NR	6	Canada	Urban	86-88	3	
		Canned Fish	NR	NR	NR	8	Canada	Urban	86-88	3	
		Cheese	NR	NR	NR	7	Canada	Urban	86-88	3	
		Cream	NR	NR	NR	<1	Canada	Urban	86-88	3	
		Eggs	NR	NR	NR	1	Canada	Urban	86-88	3	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
77	3,3',4,4'-TCB	Organ Meats	NR	NR	NR	2	Canada	Urban	86-88	3	
	(continued)	Poultry	NR	NR	NR	2	Canada	Urban	86-88	3	
		Beef	NR	NR	NR	3.83	Various U.S. Locations	Urban	95	4	
		Chicken	NR	NR	NR	10.7	Various U.S. Locations	Urban	95	4	
		Pork	NR	NR	NR	10.6	Various U.S. Locations	Urban	95	4	
		Beef Back Fat	63	12	ND-7.97	0.98	Various U.S. Locations	U.S. Slaughterhouses	94	5	
		Milk	8	8	NR	10.6	Various U.S. Sites	Background	96	7	
		Pork	78	13	NR	1.57	Various U.S. Sites	Background	95	8	
		Young Chickens	39	39	NR	9.3	Various U.S. Sites	Background	96	9	
		Light Fowl	12	12	NR	12.2	Various U.S. Sites	Background	96	9	
		Heavy Fowl	12	12	NR	10.6	Various U.S. Sites	Background	96	9	
		Young Turkeys	15	12	NR	5.6	Various U.S. Sites	Background	96	9	
		Butter	21	21	0.03-1.83	0.41	Spain		NR	11	supermarket

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
Pentachloro-PCB (MW=326.44)											
105	2,3,3',4,4'-PeCB	Steak	1	1	NR	19	Canada	Urban	86-88	6	
		Roast Beef	3	3	NR	10	Canada	Urban	86-88	6	
		Ground Beef	2	2	NR	32	Canada	Urban	86-88	6	
		Pork	1	1	NR	54	Canada	Urban	86-88	6	
		Poultry	4	4	NR	25	Canada	Urban	86-88	6	
		Eggs	4	4	NR	34	Canada	Urban	86-88	6	
		Cream	3	3	NR	17	Canada	Urban	86-88	6	
		Ice cream	4	4	NR	16	Canada	Urban	86-88	6	
		Yogurt	1	1	NR	10	Canada	Urban	86-88	6	
		Cheese	5	5	NR	61	Canada	Urban	86-88	6	
		Cottage cheese	3	3	NR	13	Canada	Urban	86-88	6	
		Processed cheese	5	5	NR	49	Canada	Urban	86-88	6	
		Butter	4	4	NR	116	Canada	Urban	86-88	6	
		Rainbow Trout	4	NR	410-2,100	1,200	Finland	Urban	NR	1	
		Beef	6	NR	5.3-38	22	Finland	Urban	NR	1	
		Pork	3	NR	11-47	24	Finland	Urban	NR	1	
		Poultry	2	NR	NR	68	Finland	Urban	NR	1	
105	2,3,3',4,4'-PeCB	Inner Organs	5	NR	8.1-11	45	Finland	Urban	NR	1	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	(continued)	Eggs	2	NR	NR	98	Finland	Urban	NR	1	
		Fish Liver Oil	2	NR	NR	30,000	Finland	Urban	NR	1	
		Beef	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Chicken	NR	NR	NR	78	Various U.S. Locations	Urban	95	4	
		Pork	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Hot Dog/ Bologna	NR	NR	NR	400	Various U.S. Locations	Urban	95	4	
		Eggs	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Vegan Diet	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Butter	NR	NR	NR	220	Various U.S. Locations	Urban	95	4	
		Cheese	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Beef Back Fat	63	55	ND-437	92.7	Various U.S. Locations	U.S. Slaughterhouses	94	5	
		Milk	8	8	NR	170.3	Various U.S. Sites	Background	96	7	
		Pork	78	15	NR	33.4	Various U.S. Sites	Background	95	8	
		Young Chickens	39	39	NR	132	Various U.S. Sites	Background	96	9	
105	2,3,3',4,4'-PeCB	Light Fowl	12	12	NR	171	Various U.S. Sites	Background	96	9	
	(continued)	Heavy Fowl	12	12	NR	165	Various U.S. Sites	Background	96	9	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
		Young Turkeys	15	12	NR	307	Various U.S. Sites	Background	96	9	
		Eggs	3	0	ND	NA	Various U.S. Sites	Background	95	10	
		Butter	21	21	0.02-0.31	0.098	Spain		NR	11	supermarket
114	2,3,4,4',5-PeCB	Beef	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Chicken	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Pork	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Hot Dog/ Bologna	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Eggs	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Vegan Diet	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Butter	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Cheese	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Eggs	3	0	ND	NA	Various U.S. Sites		95	10	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
118	2,3',4,4',5-PeCB	Steak	5	5	NR	56	Canada	Urban	86-88	6	
		Roast Beef	5	5	NR	38	Canada	Urban	86-88	6	
		Ground Beef	5	5	NR	119	Canada	Urban	86-88	6	
		Pork	4	4	NR	55	Canada	Urban	86-88	6	
		Poultry	4	4	NR	81	Canada	Urban	86-88	6	
		Eggs	5	5	NR	99	Canada	Urban	86-88	6	
		Margarine	1	1	NR	19	Canada	Urban	86-88	6	
		Cream	5.00	5	NR	72	Canada	Urban	86-88	6	
		Ice cream	5	5	NR	53	Canada	Urban	86-88	6	
		Yogurt	5	5	NR	24	Canada	Urban	86-88	6	
		Cheese	5	5	NR	251	Canada	Urban	86-88	6	
		Cottage cheese	5	5	NR	33	Canada	Urban	86-88	6	
		Processed cheese	5	5	NR	184	Canada	Urban	86-88	6	
		Butter	5	5	NR	487	Canada	Urban	86-88	6	
		Beef	NR	NR	NR	94	Various U.S. Locations	Urban	95	4	
		Chicken	NR	NR	NR	200	Various U.S. Locations	Urban	95	4	
		Pork	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
118	`2,3',4,4',5-PeCB	Hot Dog/ Bologna	NR	NR	NR	1,100	Various U.S. Locations	Urban	95	4	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	(continued)	Eggs	NR	NR	NR	64	Various U.S. Locations	Urban	95	4	
		Vegan Diet	NR	NR	NR	15	Various U.S. Locations	Urban	95	4	
		Butter	NR	NR	NR	930	Various U.S. Locations	Urban	95	4	
		Cheese	NR	NR	NR	240	Various U.S. Locations	Urban	95	4	
		Beef Back Fat	63	63	61-2,294	448.6	Various U.S. Locations	U.S. Slaughterhouses	94	5	
		Milk	8	8	NR	685.3	Various U.S. Sites	Background	96	7	
		Pork	78	24	NR	95.5	Various U.S. Sites	Background	95	8	
		Young Chickens	39	39	NR	522	Various U.S. Sites	Background	96	9	
		Light Fowl	12	12	NR	599	Various U.S. Sites	Background	96	9	
		Heavy Fowl	12	12	NR	663	Various U.S. Sites	Background	96	9	
		Young Turkeys	15	12	NR	1,116	Various U.S. Sites	Background	96	9	
		Eggs	3	NR	NR	64	Various U.S. Sites	Background	95	10	
		Butter	21	21	0.05-1.17	0.37	Spain		NR	11	supermarket

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
126	3,3',4,4',5-PeCB	Beef	6	NR	0.3-7.3	3.2	Finland	Urban	NR	1	
		Pork	3	NR	0.5-3.7	1.5	Finland	Urban	NR	1	
		Poultry	2	NR	NR	1.2	Finland	Urban	NR	1	
		Inner Organs	5	NR	0.4-6.0	2.6	Finland	Urban	NR	1	
		Eggs	2	NR	NR	2.9	Finland	Urban	NR	1	
		Fish Liver Oil	2	NR	NR	620	Finland	Urban	NR	1	
		Milk	17	NR	NR	16.5	The Netherlands	Agricultural	NR	2	
		Milk	5	NR	NR	20.5	The Netherlands	Industrial	NR	2	
		Milk	7	NR	NR	35.8	The Netherlands	Near Waste Incinerator	NR	2	
		Milk	10	NR	NR	30.3	The Netherlands	Outlying Land of Main Rivers	NR	2	
		Beef	NR	NR	NR	1	Canada	Urban	86-88	3	
		Butter	NR	NR	NR	12	Canada	Urban	86-88	3	
		Canned Fish	NR	NR	NR	3	Canada	Urban	86-88	3	
		Cheese	NR	NR	NR	3	Canada	Urban	86-88	3	
		Cream	NR	NR	NR	<1	Canada	Urban	86-88	3	
		Eggs	NR	NR	NR	1	Canada	Urban	86-88	3	
		Organ Meats	NR	NR	NR	1	Canada	Urban	86-88	3	
		Poultry	NR	NR	NR	<1	Canada	Urban	86-88	3	
126	3,3',4,4',5-PeCB	Beef	NR	NR	NR	0.39	Various U.S. Locations	Urban	95	4	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	(continued)	Chicken	NR	NR	NR	0.38	Various U.S. Locations	Urban	95	4	
		Pork	NR	NR	NR	0.10	Various U.S. Locations	Urban	95	4	
		Hot Dog/ Bologna	NR	NR	NR	0.71	Various U.S. Locations	Urban	95	4	
		Eggs	NR	NR	NR	0.29	Various U.S. Locations	Urban	95	4	
		Vegan Diet	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Butter	NR	NR	NR	3.38	Various U.S. Locations	Urban	95	4	
		Cheese	NR	NR	NR	1.04	Various U.S. Locations	Urban	95	4	
		Milk	NR	NR	NR	0.16	Various U.S. Locations	Urban	95	4	
		Ice Cream	Nr	NR	NR	0.86	Various U.S. Locations	Urban	95	4	
		Beef Back Fat	63	63	0.7-21.2	4.1	Various U.S. Locations	U.S. Slaughterhouses	94	5	
		Milk	8	8	NR	3.6	Various U.S. Sites	Background	96	7	
		Pork	78	24	NR	0.33	Various U.S. Sites	Background	95	8	
		Young Chickens	39	39	NR	1.8	Various U.S. Sites	Background	96	9	
		Light Fowl	12	12	NR	1.6	Various U.S. Sites	Background	96	9	
126	3,3',4,4',5-PeCB	Heavy Fowl	12	12	NR	2.2	Various U.S. Sites	Background	96	9	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	(continued)	Young Turkeys	15	12	NR	4.4	Various U.S. Sites	Background	96	9	
		Eggs	3	NR	NR	0.29	Various U.S. Sites	Background	95	10	
		Butter	21	16	ND-0.62	NR	Spain		NR	11	supermarket
		Hexachloro-PCB (MW=360.88)									
156	2,3,3',4,4',5-HxCB	Steak	2	2	NR	8	Canada	Urban	86-88	6	
		Ground Beef	4	4	NR	14	Canada	Urban	86-88	6	
		Pork	2	2	NR	9	Canada	Urban	86-88	6	
		Poultry	3	3	NR	16	Canada	Urban	86-88	6	
		Eggs	3	3	NR	24	Canada	Urban	86-88	6	
		Cream	2	2	NR	9	Canada	Urban	86-88	6	
		Ice cream	2	2	NR	9	Canada	Urban	86-88	6	
		Yogurt	1	1	NR	7	Canada	Urban	86-88	6	
		Cheese	5	5	NR	28	Canada	Urban	86-88	6	
		Cottage cheese	1	1	NR	13	Canada	Urban	86-88	6	
		Processed cheese	5	5	NR	22	Canada	Urban	86-88	6	
		Butter	5	5	NR	63	Canada	Urban	86-88	6	
156	2,3,3',4,4',5-HxCB	Beef Back Fat	63	63	4.9-426	60.7	Various U.S. Locations	Urban	94	5	
	(Continued)	Milk	8	8	NR	60.1	Various U.S. Sites	Background	96	7	
		Pork	78	30	NR	21.6	Various U.S. Sites	Background	95	8	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
		Young Chickens	39	39	NR	41	Various U.S. Sites	Background	96	9	
		Light Fowl	12	11	NR	58	Various U.S. Sites	Background	96	9	
		Heavy Fowl	12	12	NR	54	Various U.S. Sites	Background	96	9	
		Young Turkeys	15	12	NR	108	Various U.S. Sites	Background	96	9	
		Butter	21	15	ND-0.21	NR	Spain		NR	11	supermarket
157	2,3,3',4,4',5'-HxCB	Beef Back Fat	63	62	ND-91.7	13.8	Various U.S. Locations	Urban	94	5	
		Milk	8	8	NR	13.8	Various U.S. Sites	Background	96	7	
		Pork	78	32	NR	5.1	Various U.S. Sites	Background	95	8	
		Young Chickens	39	39	NR	10.5	Various U.S. Sites	Background	96	9	
		Light Fowl	12	11	NR	12.5	Various U.S. Sites	Background	96	9	
		Heavy Fowl	12	12	NR	13.3	Various U.S. Sites	Background	96	9	
		Young Turkeys	15	12	NR	26.2	Various U.S. Sites	Background	96	9	
167	2,3',4,4',5,5'-HxCB	Butter	21	20	ND-0.49	NR	Spain	--	NR	11	supermarkets

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
169	3,3',4,4',5,5'-HxCB	Beef	6	NR	ND-1.0	0.5	Finland	Urban	NR	1	
		Pork	3	NR	ND-2.2	0.8	Finland	Urban	NR	1	
		Poultry	2	NR	ND	NA	Finland	Urban	NR	1	
		Inner Organs	5	NR	ND-0.6	0.3	Finland	Urban	NR	1	
		Eggs	2	NR	NR	0.1	Finland	Urban	NR	1	
		Fish Liver Oil	2	NR	NR	130	Finland	Urban	NR	1	
		Milk	17	NR	NR	2.6	The Netherlands	Agricultural	NR	2	
		Milk	5	NR	NR	4.0	The Netherlands	Industrial	NR	2	
		Milk	7	NR	NR	8.4	The Netherlands	Near Waste Incinerator	NR	2	
		Milk	10	NR	NR	4.2	The Netherlands	Outlying Land of Main Rivers	NR	2	
		Beef	NR	NR	NR	<1	Canada	Urban	86-88	3	
		Butter	NR	NR	NR	6	Canada	Urban	86-88	3	
		Canned Fish	NR	NR	NR	<1	Canada	Urban	86-88	3	
		Cheese	NR	NR	NR	1	Canada	Urban	86-88	3	
		Cream	NR	NR	NR	<1	Canada	Urban	86-88	3	
		Eggs	NR	NR	NR	1	Canada	Urban	86-88	3	
		Organ Meats	NR	NR	NR	1	Canada	Urban	86-88	3	
		Poultry	NR	NR	NR	<1	Canada	Urban	86-88	3	
169	3,3',4,4',5,5'-HxCB	Beef	NR	NR	NR	0.12	Various U.S. Locations	Urban	95	4	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
	(continued)	Chicken	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Pork	NR	NR	NR	0.14	Various U.S. Locations	Urban	95	4	
		Hot Dog/ Bologna	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Eggs	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Vegan Diet	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Butter	NR	NR	NR	0.39	Various U.S. Locations	Urban	95	4	
		Cheese	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Milk	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Ice Cream	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Beef Back Fat	63	59	ND-2.4	0.70	Various U.S. Locations	U.S. Slaughterhouses	94	5	
		Milk	8	8	NR	0.5	Various U.S. Sites	Background	96	7	
		Pork	78	29	NR	0.26	Various U.S. Sites	Background	95	8	
		Young Chickens	39	31	NR	0.20	Various U.S. Sites	Background	96	9	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
169	3,3',4,4',5,5'-HxCB (continued)	Light Fowl	12	8	NR	0.20	Various U.S. Sites	Background	96	9	
		Heavy Fowl	12	11	NR	0.40	Various U.S. Sites	Background	96	9	
		Young Turkeys	15	12	NR	0.60	Various U.S. Sites	Background	96	9	
		Eggs	3	0	NR	0.10	Various U.S. Sites	Background	95	10	
		Butter	21	0	ND	NA	Spain		NR	11	supermarket
Heptachloro-PCB (MW=396.33)											
170	2,2',3,3',4,4',5-HpCB	Butter	21	21	0.07-0.27	0.16	Spain	--	NR	11	supermarkets
180	2,2',3,4,4',5,5-HpCB	Beef	NR	NR	NR	280	Various U.S. Locations	Urban	95	4	
		Chicken	NR	NR	NR	230	Various U.S. Locations	Urban	95	4	
		Pork	NR	0	ND	NA	Various U.S. Locations	Urban	95	4	
		Hot Dog/ Bologna	NR	NR	NR	140	Various U.S. Locations	Urban	95	4	
		Eggs	NR	NR	NR	16	Various U.S. Locations	Urban	95	4	
		Vegan Diet	NR	NR	NR	7	Various U.S. Locations	Urban	95	4	
		Butter	NR	NR	NR	250	Various U.S. Locations	Urban	95	4	
		Cheese	NR	NR	NR	32	Various U.S. Locations	Urban	95	4	

Table B-16 Environmental Levels of PCBs in Food Products (ppt) (continued)

IUPAC number	Chemical	Sample Type	Number samples	Number positive samples	Concentration range	Conc. mean	Location	Location description	Sample year	Ref. no.	Comments
180	2,2',3,4,4',5,5-HpCB	Eggs	3	NR	NR	16	Various U.S. Sites	--	95	10	
	(continued)	Butter	21	21	0.12-1.26	0.61	Spain	--	NR	11	supermarkets
189	2,3,3',4,4',5,5'-HpCB	Roast beef	1	1	NR	10	Canada	Urban	86-88	6	
		Cream	1	1	NR	10	Canada	Urban	86-88	6	
		Butter	1	1	NR	7	Canada	Urban	86-88	6	

Footnote References

NR= Not Reported

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