

Supplementary material
Levels of persistent organic pollutants (POPs) in the Antarctic atmosphere over time (1980 to 2021) and estimation of their atmospheric half-lives.

Thais Luarte^{1,2,3}, Victoria A. Gómez^{2,3}, Ignacio Poblete-Castro⁴, Eduardo Castro-Nallar^{3,5,6}, Nicolas Hunneus^{3,7,8}, Marco Molina-Montenegro^{3,6}, Claudia Egas⁶, Germán Azcune⁹, Andrés Pérez-Parada⁹, Rainier Lohmann¹⁰, Pernilla Bohlin-Nizzetto¹¹, Jordi Dachs¹², Susan Bengtson-Nash¹³, Gustavo Chiang¹⁴, Karla Pozo^{15,16}, Cristobal J. Galbán-Malagón^{2,3,17}.

¹Programa de Doctorado en Medicina de la Conservación, Facultad Ciencias de La Vida, Universidad Andrés Bello, Santiago, 8370251, Chile

²GEMA, Center for Genomics, Ecology & Environment, Universidad Mayor, Camino La Pirámide, 5750 Huechuraba, Santiago, 8580745, Chile

³Anillo en Ciencia y Tecnología Antártica POLARIX

⁴Biosystems Engineering Laboratory, Department of Chemical and Bioprocess Engineering, Universidad de Santiago de Chile (USACH), Santiago, Chile

⁵Departamento de Microbiología, Facultad de Ciencias de la Salud, Universidad de Talca, Campus Talca, Av. Lircay s/n, Talca, 3460000, Chile

⁶Centro de Ecología Integrativa, Universidad de Talca, Campus Talca, Av. Lircay s/n, Talca, 3460000, Chile

⁷Center for Climate and Resilience Research (CR)², Santiago, 8370415, Chile

⁸Department of Geophysics, Faculty of Physical and Mathematical Sciences, University of Chile, Santiago, 8370456, Chile

⁹Departamento de Desarrollo Tecnológico – DDT, Centro Universitario Regional del Este (CURE), Universidad de la República, Ruta 9 y Ruta 15, Rocha, 27000, Uruguay

¹⁰Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island, 02882, USA

¹¹NILU – Norwegian Institute for Air Research, P. O. Box 100, Kjeller, 2027, Norway

¹²Department of Environmental Chemistry, IDAEA-CSIC, c/Jordi Girona 18-26, Barcelona, Catalunya 08034, Spain

¹³Southern Ocean Persistent Organic Pollutants Program, Centre for Planetary Health and Food Security, School of Environment and Science, Griffith University, Nathan, QLD, 4111, Australia

¹⁴Center for Sustainable Research & Department of Ecology and Biodiversity, Faculty of Life Sciences, Universidad Andres Bello, Santiago, 8370251, Chile

¹⁵Facultad de Ingeniería y Tecnología, Universidad San Sebastián, Lientur 1457, Concepción, Chile

¹⁶RECETOX, Faculty of Science, Masaryk University, Kotlarska 2, Brno, Czech Republic

¹⁷Institute of Environment, Florida International University, University Park, Miami, FL 33199, USA

Correspondence to: Thais Luarte (thaisluarte@gmail.com) & Cristobal J. Galbán-Malagón (cristobal.galban@umayor.cl)

Table s.1. Reported atmospheric levels for the OCPs isomers reviewed

Year	HCB	α -HCH	β -HCH	γ -HCH	pp DDT	op DDT	pp DDE	op DDE	pp DDD	op DDD	Reference
2005	-	ND	ND	ND	ND	ND	ND	ND	0.29	ND	Baek et al. 2011
2006	-	2.5	0.12	1.03	ND	ND	0.4	ND	ND	ND	Baek et al. 2011
2006	-	1.98	ND	0.72	ND	ND	ND	ND	ND	ND	Baek et al. 2011
2006	-	2.36	ND	0.7	ND	ND	ND	ND	ND	ND	Baek et al. 2011
2007	-	1.72	ND	ND	ND	ND	ND	ND	ND	ND	Baek et al. 2011
1990	NR	4.8	-	5	NA	-	NA	-	-	-	Bidleman et al. 1993
1990	NR	4	-	1.7	1.1	-	0.64	-	-	-	Bidleman et al. 1993
1990	NR	4.7	-	6	0.089	-	0.43	-	-	-	Bidleman et al. 1993
1990	40	3.3	-	1.4	0.38	-	0.17	-	-	-	Bidleman et al. 1993
1990	78	3.3	-	1.1	<0.2	-	0.25	-	-	-	Bidleman et al. 1993
1990	NR	2.7	-	1.6	NA	-	na	-	-	-	Bidleman et al. 1993
1990	70	3.6	-	5.6	0.35	-	0.17	-	-	-	Bidleman et al. 1993
1990	NR	4.4	-	16.9	0.58	-	0.51	-	-	-	Bidleman et al. 1993
1990	NR	6.7	-	13	0.72	-	0.54	-	-	-	Bidleman et al. 1993
2014	-	<0.13	<0.065	2.23	ND	<0.91	<0.15	ND	ND	<0.72	Bigot et al., 2016
2014	-	<0.23	<0.032	2.8	<0.61	<0.91	0.44	<0.099	<0.49	<0.39	Bigot et al., 2016
2014	-	<0.33	<0.059	3.15	nd	<2.73	0.15	<0.15	<0.38	<0.41	Bigot et al., 2016
2014	-	<0.80	<0.37	4.34	<7.79	<0.99	<0.78	<0.51	<1.77	<1.62	Bigot et al., 2016
2014	-	0.93*	<0.76	2.48	<5.30	ND	<0.15	<0.15	<0.67	<0.62	Bigot et al., 2016
2014	-	<0.31	<0.030	3.36	NR	NR	<0.15	ND	NR	<0.60	Bigot et al., 2016
2014	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	Bigot et al., 2016
2014	-	<0.15	<0.079	<0.70	<0.67	<1.04	nd	<0.15	nd	<0.39	Bigot et al., 2016
2014	-	<0.44	<0.23	2.88*	<3.44	nd	<0.15	<0.30	<0.54	<1.22	Bigot et al., 2016
2014	-	<1.11	<0.69	1.93	ND	ND	ND	ND	ND	<0.39	Bigot et al., 2016
2014	-	<0.30	<0.10	2.35	ND	ND	ND	ND	ND	ND	Bigot et al., 2016
2003	-	0.21	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2003	-	0.35	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2003	-	0.25	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2003	-	0.17	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2003	-	0.17	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2004	-	0.25	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2004	-	0.19	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2004	-	0.1	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2004	-	0.3	-	-	-	-	-	-	-	-	Cincinelli et al., 2009
2001	19.5	0.2	-	2.26	-	-	-	-	-	-	Dickhut et al. 2005
2001	12.2	0.49	-	2.08	-	-	-	-	-	-	Dickhut et al. 2005

Continue

2001	22.4	0.46	-	0.8	-	-	-	-	-	-	Dickhut et al. 2005
2001	23.1	0.52	-	0.48	-	-	-	-	-	-	Dickhut et al. 2005
2001	12.6	0.35	-	0.87	-	-	-	-	-	-	Dickhut et al. 2005
2001	28.1	0.38	-	0.29	-	-	-	-	-	-	Dickhut et al. 2005
2001	24	0.39	-	2.41	-	-	-	-	-	-	Dickhut et al. 2005
2001	24.7	0.16	-	0.24	-	-	-	-	-	-	Dickhut et al. 2005
2001	15.3	0.41	-	0.42	-	-	-	-	-	-	Dickhut et al. 2005
2001	11.9	0.26	-	1.18	-	-	-	-	-	-	Dickhut et al. 2005
2001	<5	0.28	-	2.09	-	-	-	-	-	-	Dickhut et al. 2005
2001	21.2	0.33	-	0.06	-	-	-	-	-	-	Dickhut et al. 2005
2001	NQ	0.37	-	0.28	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	<0.05	-	0.91	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.39	-	0.45	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.32	-	0.45	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.24	-	2.98	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.34	-	0.31	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.19	-	<0.02	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.1	-	0.45	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.2	-	0.2	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.3	-	0.29	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.47	-	0.26	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.39	-	0.32	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.35	-	0.47	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.18	-	0.2	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.31	-	<0.02	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.24	-	0.41	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.25	-	<0.02	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.34	-	0.43	-	-	-	-	-	-	Dickhut et al. 2005
2002	NQ	0.32	-	0.34	-	-	-	-	-	-	Dickhut et al. 2005
2008	9.33	0.87	-	3.89	-	-	-	-	-	-	Galban-Malagon et al., 2013

Continue

2008	13.54	5.84	-	5.11	-	-	-	-	-	-	Galban-Malagon et al., 2013
2008	2.18	0.06	-	3.93	-	-	-	-	-	-	Galban-Malagon et al., 2013
2008	3.28	0.18	-	5.84	-	-	-	-	-	-	Galban-Malagon et al., 2013
2008	5.01	1.2	-	7.1	-	-	-	-	-	-	Galban-Malagon et al., 2013
2008	15.82	2.09	-	1.47	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	2.35	0.31	-	0.54	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	30.13	0.14	-	1.87	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	25.98	0.05	-	0.11	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	3.31	0.04	-	0.2	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	34.24	0.23	-	0.25	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	12.62	0.46	-	3	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	51.82	0.22	-	0.19	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	27.31	0.16	-	0.07	-	-	-	-	-	-	Galban-Malagon et al., 2013
2009	49.71	0.1	-	0.16	-	-	-	-	-	-	Galban-Malagon et al., 2013
2010-2011	179	5	1.5	2.7	0.8	0.2	1.5	0.4	0.9	0.3	Hao et al. 2019
2011-2012	167	1.9	0.9	0.5	0.2	0.09	0.3	0.14	0.16	0.06	Hao et al. 2019
2012-2013	190	2.2	1.2	1.2	0.2	0.2	0.6	0.19	0.17	0.1	Hao et al. 2019
2013-2014	222	2.5	0.9	1	0.2	0.2	1	0.5	0.14	0.1	Hao et al. 2019
2014-2015	167	1.1	0.3	0.2	0.15	0.07	0.6	0.12	0.05	0.07	Hao et al. 2019
2015-2017	129	1	0.12	0.2	0.07	0.04	0.2	0.04	0.03	0.039	Hao et al. 2019
2017-2018	148	0.8	0.1	0.13	0.1	0.04	0.17	0.04	0.05	0.3	Hao et al. 2019
1994	-	2.1	-		0.48 ^x		0.28 ^x	<0.03	<0.01	<0.03	Kallenborn et al., 1998
1994	-	1.6	-		0.41 ^x	0.19 ^x	0.21 ^x	<0.03	<0.01	<0.03	Kallenborn et al., 1998
1994	-	2.1	-		<0.08	0.17 ^x	0.56	<0.03	<0.01	<0.03	Kallenborn et al., 1998
1994	-	2.3	-		0.52 ^x	0.13 ^x	2.6	<0.03	0.38	0.09 ^x	Kallenborn et al., 1998

Continue

1994	-	1.6	-		0.12 ^x	0.17 ^x	<0.2	<0.03	0.05 ^x	<0.03	Kallenborn et al., 1998
1994	-	0.7	-		0.24 ^x	0.06 ^x	<0.2	<0.03	0.06 ^x	0.04 ^x	Kallenborn et al., 1998
1994	-	2	-		0.12 ^x	0.09 ^x	<0.2	<0.03	0.05 ^x	<0.03	Kallenborn et al., 1998
1995	-	1.6	-		<0.08	0.06 ^x	<0.2	<0.03	<0.01	<0.03	Kallenborn et al., 1998
1995	-	4.6	-		1.1	0.07 ^x	0.39 ^x	0.04 ^x	0.10 ^x	<0.03	Kallenborn et al., 1998
1995	-	<0.9	-		0.38 ^x	0.34 ^x	<0.2	0.9	0.57	0.73	Kallenborn et al., 1998
1995	-	4.2	-		0.48 ^x	0.49	0.29 ^x	<0.03	<0.01	0.05 ^x	Kallenborn et al., 1998
1995	-	3.7	-		0.43 ^x	0.27 ^x	0.28 ^x	0.04 ^x	<0.01	<0.03	Kallenborn et al., 1998
1995	-	4.6	-		0.42 ^x	0.21 ^x	0.39 ^x	<0.03	<0.01	<0.03	Kallenborn et al., 1998
1995	-	5.2	-		<0.08	0.25 ^x	0.40 ^x	<0.03	<0.01	0.05 ^x	Kallenborn et al., 1998
1995	-	<0.9	-		<0.08	<0.01	0.85	<0.03	0.57	<0.03	Kallenborn et al., 1998
1995	-	8.4	-		<0.08	0.49	<0.2	<0.03	0.06 ^x	<0.03	Kallenborn et al., 1998
1995	-	<0.93	-		<0.08	0.14 ^x	<0.2	0.02 ^x	<0.01	<0.03	Kallenborn et al., 1998
1995	-	3	-		0.18 ^x	0.78	0.23 ^x	0.04 ^x	<0.01	<0.03	Kallenborn et al., 1998
1995	-	2.5	-		0.30 ^x	0.13 ^x	0.20 ^x	<0.03	0.05 ^x	<0.03	Kallenborn et al., 1998
1995	-	2.7	-		0.25 ^x	0.14 ^x	0.24 ^x	0.04 ^x	0.06 ^x	<0.03	Kallenborn et al., 1998
1995	-	2.7	-		<0.08	<0.01	<0.2	0.03 ^x	<0.01	<0.03	Kallenborn et al., 1998
2007	19.9	0.25	-	0.2	0.15	0.07 ^x	0.2	-	0.04	0.01	Kallenborn et al., 2013
2007	24	0.21	-	<LOQ	<LOQ	0.07	0.42	-	0.2	0.05	Kallenborn et al., 2013
2007	23.9	0.2	-	<LOQ	<LOQ	0.16	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	20.1	0.2	-	<LOQ	<LOQ	<LOQ	0.09	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	21.6	0.27	-	<LOQ	0.05	<LOQ	0.17	-	0.03	<LOQ	Kallenborn et al., 2013

Continue

2007	17.4	0.35	-	0.1	0.03	<LOQ	0.09	-	0.03	<LOQ	Kallenborn et al., 2013
2007	20	0.22	-	<LOQ	<LOQ	<LOQ	0.05	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	25.5	0.3	-	<LOQ	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	26.1	0.3	-	0.1	0.03	<LOQ	0.05	-	0.02	<LOQ	Kallenborn et al., 2013
2007	25.2	0.2	-	<LOQ	0.03	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	21.2	0.31	-	0.09	0.03	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	23.6	0.19	-	<LOQ	0.04	<LOQ	0.13	-	0.03	<LOQ	Kallenborn et al., 2013
2007	18.9	0.34	-	0.12	0.04	<LOQ	0.1	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	19	0.27	-	0.09	0.03	0.03	0.1	-	0.02	<LOQ	Kallenborn et al., 2013
2007	23.7	0.25	-	0.1	0.09	0.03	0.09	-	0.03	<LOQ	Kallenborn et al., 2013
2007	21.7	0.28	-	0.15	0.03	0.03	0.08	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	20.4	0.23	-	0.1	0.03	0.03	0.1	-	0.02	<LOQ	Kallenborn et al., 2013
2007	24.2	0.24	-	0.11	0.12	0.03	0.18	-	0.04	<LOQ	Kallenborn et al., 2013
2007	25.1	0.2	-	<LOQ	0.1	0.05	0.55	-	0.07	<LOQ	Kallenborn et al., 2013
2007	24.4	0.2	-	<LOQ	0.11	0.04	0.1	-	0.02	<LOQ	Kallenborn et al., 2013
2007	29.2	0.22	-	<LOQ	0.16	0.03	0.16	-	0.03	<LOQ	Kallenborn et al., 2013
2007	24.1	0.23	-	0.09	0.04	0.04	0.11	-	0.02	<LOQ	Kallenborn et al., 2013
2007	28.6	0.5	-	0.23	0.05	0.03	0.08	-	0.02	<LOQ	Kallenborn et al., 2013
2007	26.5	0.18	-	<LOQ	0.05	0.06	0.07	-	0.02	<LOQ	Kallenborn et al., 2013
2007	24.6	0.3	-	0.12	0.03	<LOQ	0.07	-	0.07	0.04	Kallenborn et al., 2013
2007	<LOQ	0.76	-	0.27	0.05	0.07	0.24	-	0.06	0.03	Kallenborn et al., 2013

Continue

2007	24.4	0.27	-	0.09	0.04	0.09	0.1	-	0.02	0.02	Kallenborn et al., 2013
2007	23.9	0.34	-	0.14	0.03	0.03	0.09	-	0.03	<LOQ	Kallenborn et al., 2013
2007	27.6	0.25	-	<LOQ	0.03	<LOQ	0.04	-	0.02	0.02	Kallenborn et al., 2013
2007	27.7	0.2	-	<LOQ	0.03	<LOQ	0.14	-	0.03	<LOQ	Kallenborn et al., 2013
2007	30.2	0.22	-	<LOQ	0.03	<LOQ	0.14	-	0.02	<LOQ	Kallenborn et al., 2013
2007	30.4	0.29	-	<LOQ	<LOQ	<LOQ	0.12	-	0.03	<LOQ	Kallenborn et al., 2013
2007	29.4	0.34	-	<LOQ	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	22	0.36	-	0.1	<LOQ	<LOQ	0.06	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	25.1	0.29	-	<LOQ	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	12.3	0.26	-	<LOQ	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	16.7	0.24	-	0.1	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	9.87	0.3	-	0.13	0.09	<LOQ	0.1	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	14.6	0.21	-	<LOQ	<LOQ	0.07	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	18.7	0.24	-	0.1	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2007	16.5	0.17	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	15.6	0.18	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	13.2	0.18	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	16.5	0.17	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	11.6	0.18	-	<LOQ	0.04	<LOQ	0.03	-	0.02	<LOQ	Kallenborn et al., 2013
2008	17	0.17	-	<LOQ	<LOQ	0.03	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	14.8	0.15	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

2008	20.2	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	13.8	0.15	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	16	0.16	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	16.4	0.2	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	19.1	0.18	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	17.7	0.21	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	20.5	0.2	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	19.5	0.2	-	0.1	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	18.9	0.37	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	18.7	0.44	-	0.1	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	18.5	0.25	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	19.5	0.22	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	22.1	0.27	-	0.11	<LOQ	<LOQ	0.06	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	25.3	0.19	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	15.9	0.24	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	18.7	0.21	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	28.7	0.21	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	27.5	0.41	-	0.1	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	23.7	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	23.7	0.25	-	<LOQ	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	20.5	0.18	-	<LOQ	<LOQ	<LOQ	0.09	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

2008	24.3	0.25	-	0.1	<LOQ	0.03	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	26.5	0.13	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	22.7	0.19	-	0.1	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	25.7	0.2	-	<LOQ	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	22.3	0.19	-	<LOQ	<LOQ	<LOQ	0.05	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	24.8	0.2	-	<LOQ	<LOQ	<LOQ	0.05	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	26.4	0.25	-	0.22	<LOQ	<LOQ	0.06	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	25.3	0.12	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	26.7	0.14	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	25.2	0.28	-	<LOQ	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	24.7	0.25	-		<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	27.3	0.16	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	22.6	0.27	-	0.1	<LOQ	<LOQ	0.08	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	25.9	0.17	-	<LOQ	<LOQ	0.03	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	26.2	0.19	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	28.1	0.34	-	0.1	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	25.7	0.24	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	21	0.29	-	0.1	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	26.7	0.43	-	0.11	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	27.2	0.2	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	19.1	0.46	-	0.12	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	18.9	0.2	-	<LOQ	<LOQ	0.06	0.05	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	22.1	0.16	-	<LOQ	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

2008	21.4	0.15	-	<LOQ	<LOQ	<LOQ	0.04	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	16.1	0.15	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	28.3	0.13	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	12.4	0.14	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	14.8	0.15	-	<LOQ	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	14.2	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	12.2	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	15.9	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	13.2	0.15	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	12.4	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	14.9	0.18	-	<LOQ	<LOQ	<LOQ	0.03	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	16.4	0.2	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	21.1	0.17	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	19.1	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	20.1	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	15	0.2	-	<LOQ	<LOQ	0.03	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	19.4	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	30.9	0.35	-	0.09	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	24.2	0.19	-	<LOQ	<LOQ	<LOQ	0.02	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	<LOQ		-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	<LOQ		-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	<LOQ		-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	17.1	0.19	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

2008	17.6	0.29	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2008	16.4	0.3	-	0.13	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	21.4	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	18.6	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	19.3	0.25	-	0.1	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	25.2	0.22	-	<LOQ	<LOQ	0.03	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	24.6	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	22.7	0.22	-	0.08	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	22.1	0.23	-	0.09	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	22.8	0.38	-	0.45	0.08	<LOQ	0.22	-	0.07	<LOQ	Kallenborn et al., 2013
2009	24.6	0.21	-	0.15	0.05	<LOQ	0.12	-	0.05	<LOQ	Kallenborn et al., 2013
2009	27	0.19	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	25.5	0.21	-	0.26	0.04	<LOQ	0.15	-	0.05	<LOQ	Kallenborn et al., 2013
2009	24.8	0.36	-	0.31	0.05	<LOQ	0.17	-	0.06	<LOQ	Kallenborn et al., 2013
2009	25.8	0.22	-	0.17	0.03	<LOQ	0.1	-	0.04	<LOQ	Kallenborn et al., 2013
2009	28.1	0.15	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	28.8	0.24	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	27	0.17	-	<LOQ	<LOQ	<LOQ	0.1	-	0.1	<LOQ	Kallenborn et al., 2013
2009	27.8	0.17	-	<LOQ	<LOQ	<LOQ	0.1	-	0.1	<LOQ	Kallenborn et al., 2013
2009	26.5	0.2	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	23.6	0.25	-	0.09	0.08	<LOQ	0.1	-	0.14	<LOQ	Kallenborn et al., 2013
2009	26.2	0.24	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	27.8	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

2009	29.8	0.23	-	<LOQ	0.05	<LOQ	0.1	-	0.1	<LOQ	Kallenborn et al., 2013
2009	21.4	0.24	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	22.8	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	21	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	19.8	0.19	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	16.2	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	22.3	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	18	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	15.4	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	12.3	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	12.3	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	14.9	0.14	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	11.6	0.17	-	<LOQ	0.04	<LOQ	<LOQ	-	0.06	<LOQ	Kallenborn et al., 2013
2009	12.94	0.17	-	<LOQ	0.02	0.04	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	<LOQ	0.15	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	11.8	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	15.9	0.15	-	<LOQ	0.07	<LOQ	<LOQ	-	0.09	<LOQ	Kallenborn et al., 2013
2009	12.7	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	16	0.22	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	18.25	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	21	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	21.5	0.2	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	19.8	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

2009	20.8	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	25.5	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	18.91	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	25.31	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	19.8	0.18	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	23.4	0.2	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	20.2	0.25	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2009	23.5	0.25	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	28.1	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	25.53	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	24.69	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	26.3	0.13	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	27.63	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	27.35	0.16	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	29.98	0.28	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	27.71	0.15	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	27	0.13	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	18.02	0.17	-	0.15	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	<LOQ	0.17	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	23	0.21	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	25.02	0.14	-	<LOQ	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	29.8	0.26	-	0.26	<LOQ	<LOQ	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013
2010	26.7	0.18	-	<LOQ	<LOQ	0.03	<LOQ	-	<LOQ	<LOQ	Kallenborn et al., 2013

Continue

1990			-	72	-	-	-	-	-	-	Larson et al., 1992
1995	3.3	4.7	-	17.6	19.4	-	53.8	-	29.4	-	Montone et al., 2005
1995	<0.6	14.1	-	18.4	9.7	-	8.9	-	6.8	-	Montone et al., 2005
1995	9.2	14.2	-	10.1	3.6	-	7.1	-	6.1	-	Montone et al., 2005
1995	8	14.2	-	13.8	5.6	-	9.8	-	4.4	-	Montone et al., 2005
1995	7.3	6	-	13.4	2.4	-	4.7	-	<2.7	-	Montone et al., 2005
1995	8.8	5.9	-	12.4	<2.7	-	5.3	-	<2.7	-	Montone et al., 2005
1995	10.9	10.7	-	10.3	<2.7	-	2	-	<2.7	-	Montone et al., 2005
1995	4	3.1	-	5.6	<2.7	-	2.8	-	<2.7	-	Montone et al., 2005
1995	<0.6	2.4	-	<2.7	<2.7	-	6.1	-	<2.7	-	Montone et al., 2005
1995	11.5	7.3	-	5.1	<2.7	-	2.2	-	<2.7	-	Montone et al., 2005
1995	17.4	5.3	-	6.3	<2.7	-	<2.0	-	<2.7	-	Montone et al., 2005
1995	24.6	3.3	-	3	<2.7	-	5.2	-	<2.7	-	Montone et al., 2005
1995	25.3	3.5	-	4.6	<2.7	-	<2.0	-	<2.7	-	Montone et al., 2005
1995	21.9	4.5	-	<2.7	<2.7	-	2.2	-	<2.7	-	Montone et al., 2005
1997	-	0.93	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	0.92	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	0.49	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	0.81	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	0.87	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	0.94	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	1.4	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	1.3	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-		-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	1.3	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	1.1	-	-	-	-	-	-	-	-	Jantunen et al., 2004
1997	-	1.5	-	-	-	-	-	-	-	-	Jantunen et al., 2004
2011	23.4		-	BDL	0.04	-	BDL	-	BDL	-	Pozo et al., 2017
2011	18.4		-	BDL	0.07	-	0.1	-	BDL	-	Pozo et al., 2017
2011	30.6	0.05	-	BDL	BDL	-	BDL	-	BDL	-	Pozo et al., 2017
2011	17.1	-	-	BDL	BDL	-	BDL	-	BDL	-	Pozo et al., 2017

Table S.2. Reported atmospheric levels for the 7 PCB congeners reviewed

Year	PCB 28	PCB 52	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180	Reference
2009	0.576	1.775	-	0.082	0.281	1.359	0.187	Cabrerizo et al., 2013
2009	0.29	1.325	-	0.048	0.227	1.38	0.196	Cabrerizo et al., 2013
2009	0.216	0.863	-	0.02	0.126	1.119	0.153	Cabrerizo et al., 2013
2009	0.238	0.672	-	0.048	0.174	1.175	0.185	Cabrerizo et al., 2013
2009	0.633	1.977	-	0.124	0.609	1.27	0.215	Cabrerizo et al., 2013
2009	0.315	0.494	-	0.108	0.454	1.139	0.2	Cabrerizo et al., 2013
2009	0.781	2.133	-	0.405	0.881	1.211	0.188	Cabrerizo et al., 2013
2009	0.281	1.29	-	0.064	0.34	0.819	0.13	Cabrerizo et al., 2013
2009	0.6	1.296	-	0.339	0.581	1.107	0.221	Cabrerizo et al., 2013
2009	0.133	0.88		0.022	0.144	0.854	0.144	Cabrerizo et al., 2013
2009	0.186	0.505	-	0.034	0.212	0.729	0.143	Cabrerizo et al., 2013
2009	0.224	0.534	-	0.02	0.159	0.718	0.108	Cabrerizo et al., 2013
2009	0.259	0.691	-	0.058	0.359	0.783	0.142	Cabrerizo et al., 2013
2009	0.144		-	0.035	0.231	0.565	0.108	Cabrerizo et al., 2013
2009	0.247	3.86	-	0.036	0.262	0.628	0.129	Cabrerizo et al., 2013
2005	1.41	4.84	-	0.68	0.88	1.02	0.51	Galbán-Malagón et al., 2013
2005	1.07	5.01	-	1.97	1.91	2.38	0.35	Galbán-Malagón et al., 2013
2005	2.62	3.73	-	0.51	2.59	2.8	0.18	Galbán-Malagón et al., 2013
2005	2.02	1.53	-	0.62	0.94	1.06	0.13	Galbán-Malagón et al., 2013
2005	0.88		-	0.57	0.59	0.71	0.52	Galbán-Malagón et al., 2013
2005	0.53	2.38	-	0.25	0.42	0.49	0.2	Galbán-Malagón et al., 2013
2005	2.59	5.1	-	1.39	1.92	2.28	0.3	Galbán-Malagón et al., 2013
2005	0.6	5.35	-	0.38	0.65	0.69	0.34	Galbán-Malagón et al., 2013
2005	1.56	6.1	-	0.51	1.01	0.93	0.17	Galbán-Malagón et al., 2013
2005	2.71	0.56	-	0.79	1.1	1.08	NR	Galbán-Malagón et al., 2013
2005	1.82	0.09	-	0.58	0.56	0.56	NR	Galbán-Malagón et al., 2013
2008	3.89	0.09	-	2.27	4.39	2.87	1.9	Galbán-Malagón et al., 2013
2008	5.11	1.77	-	4.07	2.75	2.68	0.03	Galbán-Malagón et al., 2013
2008	0.39	4.56	-	0.59	0.17	0.22	0.12	Galbán-Malagón et al., 2013

Continue

2008	0.58	1.29	-	0.26	0.37	0.48	0.75	Galbán-Malagón et al., 2013
2008	12.96	0.78	-	1.8	1.94	1.75	1.41	Galbán-Malagón et al., 2013
2008	2.93	2.92	-	0.89	2.17	11.21	0.39	Galbán-Malagón et al., 2013
2009	1.05	0.29	-	0.43	1.22	1.55	0.13	Galbán-Malagón et al., 2013
2009	1.97	0.1	-	0.14	0.53	0.71	0.89	Galbán-Malagón et al., 2013
2009	5.1	1.15	-	1.19	2.01	2.57	0.26	Galbán-Malagón et al., 2013
2009	2	0.36	-	0.33	0.74	0.91	0.18	Galbán-Malagón et al., 2013
2009	1.18	0.23	-	0.38	0.21	0.55	0.23	Galbán-Malagón et al., 2013
2009	1.5	0.43	-	1	0.72	0.71	0.27	Galbán-Malagón et al., 2013
2009	3.14	1.3	-	0.33	0.7	0.75	0.32	Galbán-Malagón et al., 2013
2009	1.58	0.6	-	0.15	0.41	0.87	0.17	Galbán-Malagón et al., 2013
2009	0.89	NR	-	0.17	0.23	0.45	0.04	Galbán-Malagón et al., 2013
2009	0.16	NR	-	0.02	0.05	0.12	0.01	Galbán-Malagón et al., 2013
2009	0.21	NR	-	0.02	0.01	0.07	0.02	Galbán-Malagón et al., 2013
2009	0.2	NR	-	0.02	0.02	0.08	NR	Galbán-Malagón et al., 2013
2003-2004	-	-	-	2		-	-	Gambaro et al., 2005
2010-2011	4.7	1.1	0.3	0.14	0.3	0.5	0.1	Hao et al. 2019
2011-2012	2.3	0.5	0.3	0.17	0.2	0.3	0.07	Hao et al. 2019
2012-2013	4.4	0.69	0.3	0.2	0.16	0.21	0.05	Hao et al. 2019
2013-2014	3.3	0.4	0.3	0.13	0.12	0.14	0.03	Hao et al. 2019
2014-2015	1.3	0.3	0.3	0.14	0.2	0.2	0.05	Hao et al. 2019
2015-2017	0.7	0.15	0.07	0.03	0.04	0.06	0.02	Hao et al. 2019
2017-2018	0.5	0.11	0.06	0.02	0.03	0.05	0.01	Hao et al. 2019
1994	3.9	1.1	0.53 ^x	0.53	0.51 ^x	0.45 ^x	0.17 ^x	Kallenborn et al., 1998
1994	0.84 ^x	0.31 ^x	0.26 ^x	0.32 ^x	0.24 ^x	0.30 ^x	0.12 ^x	Kallenborn et al., 1998
1994	1.0 ^x	0.44 ^x	0.27 ^x	0.39 ^x	0.34 ^x	0.48	0.18 ^x	Kallenborn et al., 1998
1994	1.8 ^x	0.98 ^x	0.59 ^x	1.1	1.4	2.7	1.11	Kallenborn et al., 1998
1994	2.8 ^x	0.93 ^x	0.29 ^x	0.23 ^x	0.22 ^x	<0.2	0.09 ^x	Kallenborn et al., 1998
1994	<0.8	0.12 ^x	0.06 ^x	0.07 ^x	0.06 ^x	<0.2	0.03 ^x	Kallenborn et al., 1998
1995	1.2 ^x	0.46 ^x	0.13 ^x	0.16 ^x	<0.1	<0.2	0.09 ^x	Kallenborn et al., 1998

Continue

1995	16	9.5	3.9	0.6	0.57	0.94	0.13 ^x	Kallenborn et al., 1998
1995	25	13	4.5	0.95	0.83	1.2	0.2	Kallenborn et al., 1998
1995	15	12	5	0.79	0.63	1.1	0.06 ^x	Kallenborn et al., 1998
1995	22	12	4.5	0.85	0.77	1.3	0.22	Kallenborn et al., 1998
1995	16	8.8	3.4	0.68	0.71	0.98	0.18 ^x	Kallenborn et al., 1998
1995	21	13	4.8	0.79	0.79	1.4	0.22	Kallenborn et al., 1998
1995	24	15	5.7	0.95	1.1	1.6	0.29	Kallenborn et al., 1998
1995	9.4	6	2.3	0.33 ^x	0.27	0.53	0.09 ^x	Kallenborn et al., 1998
1995	<0.8	<0.4	3.6	0.61	1.1	1.1	0.24	Kallenborn et al., 1998
1995	4.7	1.1	0.26	0.12 ^x	<0.1	<0.2	0.02 ^x	Kallenborn et al., 1998
1995	16	9.5	3.9	0.6	0.57	0.94	0.13 ^x	Kallenborn et al., 1998
1995	13	7.5	2.9	0.49	0.45 ^x	0.73	0.11 ^x	Kallenborn et al., 1998
1995	14	8.4	3.4	0.54	0.52 ^x	0.84	3.4	Kallenborn et al., 1998
1995	7.4	4.6	1.7	0.27 ^x	0.28 ^x	0.43 ^x	0.06 ^x	Kallenborn et al., 1998
2008	0.25	-	<LOQ	-	-	-	-	Kallenborn et al., 2013
2008	0.16	-	<LOQ	-	-	-	-	Kallenborn et al., 2013
2009	0.13	-	0.1	-	-	-	-	Kallenborn et al., 2013
2009	0.21	-	0.07	-	-	-	-	Kallenborn et al., 2013
2010	0.18	-	0.07	-	-	-	-	Kallenborn et al., 2013
2010	0.45	-	0.24	-	-	-	-	Kallenborn et al., 2013
2010	0.15	-	0.09	-	-	-	-	Kallenborn et al., 2013
1988	-	-	4	-	2	4	-	Larson et al., 1999
1988	-	-	ND	-	1	1	-	Larson et al., 1999
1988	-	-	1	-	1	1	-	Larson et al., 1999
1988	-	-	14	-	14	10	-	Larson et al., 1999
1988	-	-	ND	-	1	0.5	-	Larson et al., 1999
1988	-	-	1	-	0.3	0.3	-	Larson et al., 1999
1988	-	-	4	-	1	1	-	Larson et al., 1999
1988	-	-	2	-	1	1	-	Larson et al., 1999
1988	-	-	ND	-	1	1	-	Larson et al., 1999

Continue

1988		-	1	-	0.4	0.3	-	Larson et al., 1999
1988	-	-	ND	-	13	10	-	Larson et al., 1999
1988	-	-	444	-	1810	1280	-	Larson et al., 1999
1988	-	-	2	-	9	1	-	Larson et al., 1999
1989	-	-	2	-	2	1	-	Larson et al., 1999
1989	-	-	3	-	1	1	-	Larson et al., 1999
1989	-	-	ND	-	ND	ND	-	Larson et al., 1999
1989	-		7		5	15		Larson et al., 1999
1989	-	-	1	-	1	1	-	Larson et al., 1999
1989	-	-	7	-	2	2	-	Larson et al., 1999
1989	-	-	ND	-	1	1	-	Larson et al., 1999
1989	-	-	4	-	1	1	-	Larson et al., 1999
1989	-	-	1	-	ND	0	-	Larson et al., 1999
1989	-	-	ND	-	ND	ND	-	Larson et al., 1999
1989		-	2	-	1	0	-	Larson et al., 1999
1989	-	-	ND	-	1	1	-	Larson et al., 1999
1989	-	-	3	-	2	2	-	Larson et al., 1999
1989	-	-	0.5	-	0.2	0.3	-	Larson et al., 1999
1989	-	-	1	-	0.3	0.4	-	Larson et al., 1999
1990	-	-	1	-	1	1	-	Larson et al., 1999
2009-2010	3.46	0.67	0.1	0.197	0.18	0.26	0.039	Li et al. 2012
2009-2010	5.53	0.62	0.05	0.07	0.05	0.07	0.009	Li et al. 2012
2009-2010	1.7	0.24	0.16	0.042	0.03	0.04	0.006	Li et al. 2012
2009-2010	5.1	0.78	0.05	0.148	0.11	0.17	0.029	Li et al. 2012
2009-2010	1.17	0.2	0.19	0.064	0.06	0.1	0.019	Li et al. 2012
2009-2010	0.57	0.068	0.086	0.034	0.032	0.028	0.01	Li et al. 2012b
2009-2010	1.08	0.056	0.14	0.026	0.048	0.04	0.008	Li et al. 2012b
2009-2010	1.1	0.13	0.32	0.024	0.03	0.032	0.01	Li et al. 2012b
2009-2010	0.28	0.21	0.084	0.036	0.036	0.04	0.012	Li et al. 2012b
1993	-	8	6.8	5.9	3.8	7.3	<0.64	Montone et al., 2001

Continue

1993	-	4.7	<4.00	2.4	<2.30	3.7	<0.64	Montone et al., 2001
1993	-	7.8	<4.00	3.6	<2.30	4.7	<0.64	Montone et al., 2001
1994	-	<4.57	<4.00	6.1	3.4	4.8	<0.64	Montone et al., 2001
1994	-	<4.57	<4.00	<2.40	<2.30	<3.56	<0.64	Montone et al., 2001
1994	-	<4.57	<4.00	<2.40	<2.30	<3.56	<0.64	Montone et al., 2001
1994	-	<4.57	<4.00	<2.40	<2.30	<3.56	<0.64	Montone et al., 2001
1994	-	<4.57	<4.00	<2.40	<2.30	<3.56	<0.64	Montone et al., 2001
1995	-	7.3	5.2	4.9	2.7	3.8	<0.6	Montone et al., 2003
1995	-	8.7	7.2	17	10.4	18.5	<0.6	Montone et al., 2003
1995	-	2.3	4	4.4	2.5	<3.6	<0.6	Montone et al., 2003
1996	-	19.1	12	8.5	5.2	4.1	<0.6	Montone et al., 2003
1996	-	33.2	10.7	8.7	4.3	6.4	<0.6	Montone et al., 2003
1996	-	6.6	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	-4.6	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	-4.6	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	10.5	5.4	4.5	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	9	9.5	11.5	4.6	8.2	<0.6	Montone et al., 2003
1996	-	17	8.2	6.7	-2.3	4.5	<0.6	Montone et al., 2003
1996	-	-4.6	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	-4.6	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	-4.6	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	6.8	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	5.7	<4	<2.4	-2.3	<3.6	<0.6	Montone et al., 2003
1996	-	8.6	150.8	207.8		<3.6	<0.6	Montone et al., 2003
1995	14.9	6.9	4.6	<2.4	3	<3.6	<0.6	Montone et al., 2005
1995	14.7	9.6	9.3	6	4	7.1	<0.6	Montone et al., 2005
1995	23.8	11.4	7	2.8	2.3	4.1	<0.6	Montone et al., 2005
1995	9.3	9.3	6	2.9	2.6	3.9	<0.6	Montone et al., 2005
2011	BDL	0.1	0.03	0.07	0.11	0.04	0.06	Pozo et al. 2017
2011	0.03	0.08	0.03	BDL	0.07	0.04	BDL	Pozo et al. 2017

Continue

2014	ND	ND	0.12	ND	ND	0.094	ND	Wu et al. 2020
2014	ND	ND	ND	ND	ND	ND	ND	Wu et al. 2020
2014	ND	ND	0.12	0.34	0.2	0.3	0.27	Wu et al. 2020
2014	ND	ND	ND	0.14	ND	0.14	0.083	Wu et al. 2020
2014	ND	ND	ND	ND	ND	0.1	ND	Wu et al. 2020
2014	ND	ND	ND	ND	ND	0.097	ND	Wu et al. 2020

Table S.3. Physical-chemical properties of POPs reported in the Antarctic atmosphere. Data shown are the molecular weight (MW), Henry's law constant (H), octanol-water partition coefficient (log K_{OW}), octanol-air partition coefficient (log K_{OA}) and estimated atmospheric decrementing times (T_D) and half-lives reported by other studies.

Compound	MW (g mol ⁻¹)	H (Pa m ³ mol ⁻¹ at 25°C)	log K _{OW}	log K _{OA}	T _D (Years)	Half-life (Years)
HCB	285	53 ^a	5.7 ^a	7.2 ^a	12.3	0.4 - 4.3 ^k
α-hch	291	0.74 ^b	3.8 ^d	7.5 ^b	14.3	0.06 ^k
γ-hch	291	0.31 ^b	3.6 ^e	3.8 ^b	10.1	0.006 ^m - 0.019 ^k
2,4 DDE	319	4.2	5.43 ^g	9.7	17.6	0.002 ⁿ
4,4-DDE	319	4.2 ^a	6.96 ^d	9.7 ^a	13.47	0.002 ⁿ
4,4 DDD	321	0.5 ^a	6.22 ^d	10a	12.76	0.002-0.02 ^m
2,4 DDT	354	1.1	8.3 ^h	9.6 ^j	14.4	0.002-0.02 ^m
4,4 DDT	354	1.1 ^a	6.39 ⁱ	9.8 ^a	17.2	0.002-0.02 ^m
PCB 28	257	37 ^c	5.7 ^f	7.9 ^c	3.9	0.038 - 0.08 ^k ; 0.008 ^l
PCB 52	292	31 ^c	5.9 ^f	8.2 ^c	3.7	0.06-0.16 ^k ; 0.17 ^l
PCB 101	326	43 ^c	6.3 ^f	8.2 ^c	4.7	0.16-0.32 ^k ; 0.34 ^l
PCB 118	326	37 ^c	6.7 ^f	9.4 ^c	3.6	0.16-0.32 ^k ; 0.34 ^l
PCB 138	361	45 ^c	7 ^f	9.7 ^c	6.5	0.07-0.2 ^k ; 0.68 ^l
PCB 153	361	50 ^c	6.9 ^f	10.4 ^c	7.6	0.07-0.2 ^k ; 0.68 ^l
PCB 180	395	37 ^c	7.2 ^f	10.2 ^c	4.6	1.36 ^k

References: ^aShen and Wania (2005); ^bXiao et al. (2004); ^cBamford et al. (2002); ^dHansch et al. (1995); ^eSangster (1993); ^fLi et al. (2003); ^gFinzio (1993); ^hChen et al. (1993); ⁱXiao et al. (2004); ^jShoeib & Harner (2002); ^kAtkinson (1987); ^lSinkonen & Parsivita (2000); ^mHoward (1991); ⁿKelly et al. (1994)

Table S.4 Results of U-Mann Whitney test performed to evaluate differences in POPs levels between East and West Antarctica.

Compound	p-value
α -HCH	2.20E-14
γ -HCH	0.4
HCB	2.80E-06
PCB-28	0.00003
PCB-52	0.00007
PCB-101	0.5
PCB-118	0.06
PCB-138	0.01
PCB-153	0.8
PCB-180	0.8

References

- Bamford, H. A., Poster, D. L., Huie, R. E., Baker, J. E.: (2002). Using extra thermodynamic relationships to model the temperature dependence of Henry's law constants of 209 PCB congeners. *Environ. Sci Environ. Sci. Technol.*, *Technol.* 36, 4395–4402. doi: 10.1021/es020599y, 2002..
- Chen, F., Holten-Andersen, J., & Tyle, H.: (1993). New developments of the UNIFAC model for environmental application. *Chemosphere*, 26(7), 1325-1354.
- Finizio, A., Guardo, A. D., & Vigh, M. (1994). Improved RP-HPLC determination of K_{ow} for some chloroaromatic chemicals using molecular connectivity indices. *SAR and QSAR in Environmental Research*, 2(4), 249-260.
- Hansch, C., Leo, A., Hoekman, D. (1995). Exploring QSAR: Hydrophobic, electronic, and steric constants. ACS Professional Reference Book. ACS, Washington. 348 pp.
- Li, N., Wania, F., Lei, Y.D., Daly, G.L. (2003). A comprehensive and critical compilation, evaluation, and selection of physical–chemical property data for selected polychlorinated biphenyls. *J. Phys. Chem. Ref. Data* 32, 1545-1590.
- Sangster, J. (1993). LOGKOW – a Databank of Evaluated Octanol-Water Partition Coefficients, Sangster Research Laboratories, Montreal.
- Shoeib, M., & Harner, T. (2002). Using measured octanol-air partition coefficients to explain environmental partitioning of organochlorine pesticides. *Environmental Toxicology and Chemistry: An International Journal*, 21(5), 984-990.
- Shen, L., Wania, F. (2005). Compilation, evaluation, and selection of physical-chemical property data for organochlorine pesticides. *J. Chem. Eng. Data* 50, 742–768.
- Xiao, H., Li, N., Wania, F. (2004). Compilation, evaluation, and selection of physical-chemical property data for α -, β -, and γ -hexachlorocyclohexane. *J. Chem. Eng. Data* 49, 173–185.