United States
Environmental Protection Agency

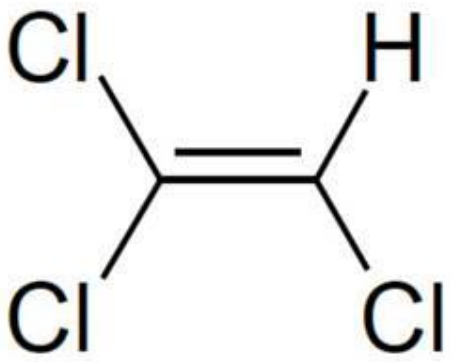
Office of Chemical Safety and
Pollution Prevention

Final Risk Evaluation for Trichloroethylene

Systematic Review Supplemental File:

Data Extraction Tables for Environmental Monitoring Data

CASRN: 79-01-6



November 2020

Table 1. Monitoring Data Extracted for TCE for Indoor Air, Personal Breathing Zone, Surface Water, and Wastewater

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
Indoor Air (µg/m3)											
US	IL, IN, OH, MI, MN, WI (Great Lakes Region)	*Residential* Non-institutionalized persons residing in households in six states	1995-1997	402 (0.361)	NR	ND to NR	3.84 (mean); 0.56 (median)	--	14003	(Clayton et al., 1999)	High
US	NR	*Commercial/Public* (Near Source: printmaking) Printmaking art studio at a university (n =1). Mechanically vented second-floor studio, with area samples collected near a cleaning station and in the middle of the studio during a printmaking session.	2002	18 (<1)	NR	ND to NR	0.2 (mean); 0.2 (median)	0.6	49414	(Ryan et al., 2002)	High
US	NR	*Commercial/Public* Non-art related floor at a university, three floors above a printmaking floor with separate ventilation (n =1). Area samples collected from hallway.	2002	18 (<1)	NR	ND to NR	0.3 (mean); 0.2 (median)	1.1	49414	(Ryan et al., 2002)	High
US	Denver, CO	*Residential* Homes, occupied (n=9)	1994	9 (0.56)	0.12	ND to NR	0.64 (mean); 0.61 (median)	0.66	78782	(Lindstrom et al., 1995)	Medium
US	Minneapolis, MN	*School* Classrooms (n=5) sampled in the spring	2000	113 (0.56)	NR	NR	NR (mean); 0.1 (median)	--	632310	(Adgate et al., 2004)	Medium
US	Minneapolis, MN	*Residential* Inside home, during the winter. Sampling from room where child spent the most time.	2000	113 (0.83)	NR	ND to NR	NR (mean); 0.3 (median)	--	632310	(Adgate et al., 2004)	Medium

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US	Minneapolis, MN	*Residential* Inside home, during the spring. Sampling from room where child spent the most time.	2000	113 (0.74)	NR	ND to NR	NR (mean); 0.2 (median)	--	632310	(Adgate et al., 2004)	Medium
US	Minneapolis, MN	*School* Classrooms (n=5) sampled in the winter	2000	113 (0.73)	NR	NR	NR (mean); 0.2 (median)	--	632310	(Adgate et al., 2004)	Medium
US	CA (five regions)	*Commercial/Public* Commercial buildings (n= 37), 1 m from floor: Fleet service / Gas station convenience store, Dentist office / Healthcare facility, Grocery / Restaurant, Hair salon / Gym, Office, Miscellaneous, Retail	2011	40 (0.7)	0.16	ND to 1.93	NR (mean); NR (median); 0.02 (GM)	--	1062239	(Wu et al., 2011)	High
US	Boston, MA	*Residential* Interior room of residences	2004-2005	83 (0.93)	0.04	ND to 2.2 (95th)	0.6 (mean); 0.2 (median)	1.7	1065844	(Dodson et al., 2008)	High
US	Boston, MA	*Residential* Basement of residences	2004-2005	52 (0.75)	0.04	ND to 1.4 (95th)	0.4 (mean); 0.1 (median)	1.1	1065844	(Dodson et al., 2008)	High
US	Boston, MA	*Residential* Apartment hallway of residences	2004-2005	10 (0.9)	0.04	ND to 23 (95th)	3.7 (mean); 0.3 (median)	7.3	1065844	(Dodson et al., 2008)	High
US	Boston, MA	*Residential* Garage of residences	2004-2005	16 (0.63)	0.04	ND to 42 (95th)	3.3 (mean); 0.1 (median)	10	1065844	(Dodson et al., 2008)	High
US	Los Angeles, CA	*Residential* Homes (n=32) in inner-city neighborhood, sampled in the fall	2000	32 (0.47)	0.13	ND to 0.8	0.2 (mean); 0.1 (median)	0.2	1066049	(Sax et al., 2004)	High
US	Los Angeles, CA	*Residential* Homes (n=40) in inner-city neighborhood, sampled in the winter	2000	40 (0.68)	0.13	ND to 1.2	0.2 (mean); 0.2 (median)	0.3	1066049	(Sax et al., 2004)	High

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US	New York, NY	*Residential* Homes (n=36) in inner-city neighborhood, sampled in the winter	1999	36 (0.92)	0.13	ND to 19	1.1 (mean); 0.4 (median)	3.2	1066049	(Sax et al., 2004)	High
US	New York, NY	*Residential* Homes (n=30) in inner-city neighborhood, sampled in the summer	1999	30 (0.44)	0.13	ND to 2.6	0.3 (mean); 0.1 (median)	0.5	1066049	(Sax et al., 2004)	High
US	Ann Arbor, Ypsilanti, and Dearborn Michigan	*Residential* Residences (n=159) in industrial, urban, and suburban cities over two seasons	2004-2005	252 (0.56)	0.01	ND to 2.01	0.06 (mean); 0.03 (median)	--	1488206	(Jia et al., 2008a)	Medium
US	Elizabeth, NJ; Houston, TX; and Los Angeles, CA	*Residential* Non-smoking households (n=310)	1999-2001	539 (NR)	NR	NR	0.99 (mean); 0.22 (median)	--	2128575	(Su et al., 2013)	Medium
US	Detroit, MI area	*Residential* Homes (n=126) with children with asthma	2009-2010	126 (0.06)	0.09	ND to 1.48	0.07 (mean); 0.04 (median)	0.14	2443355	(Chin et al., 2014)	High
CA	NR	*Residential* Homes (n=6), main floor	1987	6 (0.83)	NR	ND to 5	1.6 (mean); NR (median)	--	27974	(Chan et al., 1990)	Medium
CA	NR	*Residential* Homes (n=12), main floor	1986	12 (0.42)	NR	ND to 2	0.5 (mean); NR (median)	--	27974	(Chan et al., 1990)	Medium
MX	Mexico City Metropolitan Area	*Residential* Homes	1998-1999	30 (0.25)	0.52	ND to 0.9	NR (mean); NR (median); 0.1 (GM)	--	56224	(Serrano-Trespalacios et al., 2004)	High
DE	Leipzig	*Residential* Homes (n=85), sampled from bedroom of infants for 4 weeks after birth.	1997-1999	85 (NR)	NR	NR	NR (mean); 0.6 (median)	--	34460	(Lehmann et al., 2002)	Medium

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
FI	NR	*Residential* Normal houses (not "sick houses"). 50 "Normal houses" in this study.	1995	50 (NR)	NR	ND to 20.4	0.97 (mean); 0.25 (median)	1.48	76241	(Kostiainen, 1995)	Medium
FI	NR	*Residential* "Sick houses" - houses in which people complained about the odor or they had symptoms, which resembled WHO's Sick Building Syndrome (headache, nausea, irritation of the eyes, mucous membranes, and the respiratory system, drowsiness, fatigue, and general malaise. 38 "sick houses" in this study.	1995	7 (NR)	NR	ND to 4.3	1.07 (mean); 0.48 (median)	0.78	76241	(Kostiainen, 1995)	Medium
SG	Nationwide	*School* Child-care centers (n=104), sampled from middle of the classroom near the breathing zone of children (approximately 0.5–0.7 m)	2007	102 (0.88)	0.61	ND to 3.15	0.75 (mean); 0.305 (median)	0.32	632758	(Zuraimi and Tham, 2008)	High
FR	Nationwide	*Residential* Main dwellings(n=490), samples collected from bedroom.	2003-2005	490 (0.80)	0.4	ND to 4087	NR (mean); 0.5 (median)	130	733119	(Billionnet et al., 2011)	Medium

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						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
NL	Ede and Rotterdam	*Residential* Suburban homes built post WWII, Inner-city homes built prior to WWII, and newer homes < 6 years old. Samples collected in living room.	1981-1982	319 (0.02)	2	ND to 106	NR (mean); 1 (median)	--	22186	(Lebret et al., 1986)	Medium
EU	Sweden, Finland, Estonia, Lithuania, Belgium, UK, France, Austria, Germany, Poland, Slovakia, Czech Republic, Hungary, Romania, Bulgaria, Serbia, Bosnia and Herzegovina, Italy, Portugal, Malta, Greece, Cyprus, and Albania	*School* Homes (n=196) of the PARIS birth cohort with sampling in the infant bedroom at 1, 6, 9, and 12 months old. Annual levels averaged from hot and cold seasonal levels.	2014	300 (NR)	NR	ND to 126	3 (mean); 0.2 (median)	26	4440449	(EC, 2014)	High
EU	Sweden, Finland, Estonia, Lithuania, Belgium, UK, France, Austria, Germany, Poland, Slovakia, Czech Republic, Hungary, Romania, Bulgaria, Serbia, Bosnia and Herzegovina, Italy, Portugal, Malta, Greece, Cyprus, and Albania	*School* Kindergartens (n=25).	2014	25 (NR)	NR	ND to 21	3 (mean); 0.2 (median)	6	4440449	(EC, 2014)	High

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						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
EU	Sweden, Finland, Estonia, Lithuania, Belgium, UK, France, Austria, Germany, Poland, Slovakia, Czech Republic, Hungary, Romania, Bulgaria, Serbia, Bosnia and Herzegovina, Italy, Portugal, Malta, Greece, Cyprus, and Albania	*School* Primary schools where teachers participated (n=106).	2014	106 (NR)	NR	ND to 85	3 (mean); 0.2 (median)	5	4440449	(EC, 2014)	High
CN	NR	*Commercial/Public* Office buildings (n=10), 1.1 m above the floor	1998-2000	10 (0.6)	0.5	ND to 31.7	5.6 (mean); 1.7 (median); 2.1 (GM)	10.7	824555	(Chao and Chan, 2001)	Medium
CN	NR	*Commercial/Public* Non-office premises (n=10) including one library, one social services center, two customer services centers, two shopping malls, two recreational building units, one reception area and one training center under renovation. 1.1 m above the floor level.	1998-2000	10 (0.9)	0.5	ND to 33.3	8.8 (mean); 5.6 (median); 4.6 (GM)	3.4	824555	(Chao and Chan, 2001)	Medium
CN	Shanghai	*Residential* Eight residences that had been renovated within the previous year. Three sampling sites were used in each participating residence (the living room, bedroom, and study).	2015	8 (NR)	NR	NR	0.37 (mean); 0.35 (median)	75.7	3453725	(Dai et al., 2017)	High

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						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
JP	Shimizu, Shizuoka Prefecture	*Residential* Single-family houses (n=21) in industrial harbor area, sampled in the main living area	2001	21 (1)	NR	NR	NR (mean); NR (median); 0.36 (GM)	--	632484	(Ohura et al., 2006)	High
JP	Shimizu, Shizuoka Prefecture	*Residential* Single-family houses (n=25) in industrial harbor area, sampled in the main living area	2001	25 (1)	NR	NR	NR (mean); NR (median); 0.22 (GM)	--	632484	(Ohura et al., 2006)	High
JP	Katsushika Ward, Tokyo	*Residential* 13 houses' living rooms, sampled for 4 consecutive 24-hour periods. n=52	1995	52 (1)	NR	0.849 to 268	27 (mean); NR (median); 9.18 (GM)	--	3545469	(Amagai et al., 1999)	Medium
JP	Katsushika Ward, Tokyo	*Residential* 13 houses' kitchens, sampled for 4 consecutive 24-hour periods. n=52	1995	52 (1)	NR	0.385 to 266	27.1 (mean); NR (median); 8.96 (GM)	--	3545469	(Amagai et al., 1999)	Medium
JP	Katsushika Ward, Tokyo	*Residential* 13 houses' bedrooms, sampled for 4 consecutive 24-hour periods. n=52	1995	52 (1)	NR	0.509 to 886	42.1 (mean); NR (median); 8.86 (GM)	--	3545469	(Amagai et al., 1999)	Medium
JP	Katsushika Ward, Tokyo	*Residential* 13 houses' bathrooms, sampled for 4 consecutive 24-hour periods. n=52	1995	52 (1)	NR	0.699 to 109	24.9 (mean); NR (median); 8.8 (GM)	--	3545469	(Amagai et al., 1999)	Medium
JP	Katsushika Ward, Tokyo	*Residential* 30 houses' living rooms, sampled for 4 consecutive 24-hour periods. n=238	1995	238 (1)	NR	1.17 to 389	20.7 (mean); NR (median); 7.36 (GM)	--	3545469	(Amagai et al., 1999)	Medium
JP	Katsushika Ward, Tokyo	*Residential* 30 houses' kitchens, sampled for 4 consecutive 24-hour periods. n=119	1995	119 (1)	NR	1.23 to 275	19 (mean); NR (median); 7.25 (GM)	--	3545469	(Amagai et al., 1999)	Medium

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						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
JP	Katsushika Ward, Tokyo	*Residential* 30 houses' bedrooms, sampled for 4 consecutive 24-hour periods. n=238	1995	238 (1)	NR	1.23 to 512	25.8 (mean); NR (median); 6.96 (GM)	--	3545469	(Amagai et al., 1999)	Medium
JP	Katsushika Ward, Tokyo	*Residential* 30 houses' bathrooms, sampled for 4 consecutive 24-hour periods. n=119	1995	119 (1)	NR	0.671 to 618	28.5 (mean); NR (median); 6.39 (GM)	--	3545469	(Amagai et al., 1999)	Medium
Personal Breathing Zone (µg/m3)											
US	IL, IN, OH, MI, MN, WI (Great Lakes Region)	*Residential* Non-institutionalized persons residing in households in six states	1995-1997	386 (0.39)	NR	ND to 5.98 (90th)	5.27 (mean); 0.63 (median)	--	14003	(Clayton et al., 1999)	High
US	Columbus, OH	*Residential* Non-smoking women (n=24) with non-smoking husbands	1991	24 (NR)	NR	ND to 9.08	1.84 (mean); 1.05 (median)	2.39	22045	(Heavner et al., 1995)	Medium
US	Columbus, OH	*Residential* Non-smoking women (n=25) with smoking husbands	1991	25 (NR)	NR	ND to 3.41	0.66 (mean); ND (median)	1.04	22045	(Heavner et al., 1995)	Medium
US	NR	*Commercial/Public (Near Source: printmaking)* 12 students and 1 faculty member in university art (printmaking) studio. Mechanically ventilated second-floor.	2002	90 (NR)	NR	NR	0.5 (mean); 0.11 (median)	0.9	49414	(Ryan et al., 2002)	High

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
US	NR	*General* Personal VOC exposures of 851 adults, who were part of the NHANES study (no additional exclusion criteria), sampled via badge-type passive exposure monitors for 48–72 h. Additionally, participants were administered a short questionnaire regarding the length of time they wore their badge and 30 other questions on factors potentially related to VOC exposures, e.g., contact with dry cleaning, tobacco smoke and gasoline vapor over the past several days.	1999-2000	665 (0.23)	0.44	ND to 327	NR (mean); ND (median); 0.4 (GM)	3.4 (GSD)	484177	(Jia et al., 2008b)	High
US	Minneapolis, MN	*School* Children from inner-city schools. during the winter.	2000	113 (0.90)	NR	NR	0.3 (median)	--	632310	(Adgate et al., 2004)	Medium
US	Minneapolis, MN	*School* Children from inner-city schools. during the spring.	2000	113 (0.73)	NR	NR	0.2 (median)	--	632310	(Adgate et al., 2004)	Medium
US	Minneapolis-St. Paul, MN	*General* Adults, non-smoking (n=70) living in three neighborhoods: (inner-city/economically disadvantaged, blue-collar/near manufacturing plants, and affluent)	1999	333 (0.93)	NR	ND to 1.8 (90th)	1 (mean); 0.2 (median)	--	730121	(Sexton et al., 2007)	High

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						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
US	Elizabeth, NJ; Houston, TX; and Los Angeles, CA	*General* Adults (n=309) and children (n=118) from 310 non-smoking households.	1999-2001	544 (0.23)	NR	ND to 2.37 (95th)	1.44 (mean); 0.22 (median)	10.74	2128575	(Su et al., 2013)	Medium
US	Greater Boston Metropolitan Area	*Commercial/Public* Department Stores (n=10)	2004	5 (NR)	0.18	0.19 to 2.59	NR	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Drug Stores (n=8)	2003	7 (NR)	0.18	ND to 1.83	0.29 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Electronics Stores (n=9)	2004	7 (NR)	0.18	ND to 0.47	0.09 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Furniture Stores (n=6)	2003	6 (NR)	0.18	ND to 50.9	0.71 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Grocery Stores (n=16)	2003	12 (NR)	0.18	ND to 0.94	0.28 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	Commercial/Public Hardware Stores (n=32)	2003-2004	23 (NR)	0.18	ND to 115	0.58 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Housewares Stores (n=16)	2003	7 (NR)	0.18	0.58 to 3.43	1.1 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Multipurpose Stores (n=24)	2003-2005	43 (NR)	0.18	0.23 to 2.52	0.51 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Sporting Goods Stores (n=14)	2003	7 (NR)	0.18	0.35 to 1.56	0.5 (GM)	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Dining Stores (n=30)	2004	30 (NR)	0.18	ND to 118	NR	--	2442846	(Loh et al., 2006)	High
US	Greater Boston Metropolitan Area	*Commercial/Public* Transportation Stores (n=5)	2003-2004	21 (NR)	0.18	ND to 0.22	0.09 (GM)	--	2442846	(Loh et al., 2006)	High
US	CA and NJ	*General* Adults conducting normal daily activities	1981-1984	772 (NR)	0	NR	3.8 to 13 (mean)	--	23081	(Wallace, 1986)	High
US	NR	*Mixed Use* NHANES study measured exposures on adults aged 20–59	1999-2000	635 (0.227)	NR	0.1 to 327.3	0.3 (median); 0.4 (GM)	--	2331366	(D'Souza et al., 2009)	High

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		years to TCE. Participants wore passive exposure monitors. Returned 2–3 days later at which time a short survey was administered regarding activities potentially related to exposures.									
MX	Mexico City Metropolitan Area	*General* Different activity patterns: Three individuals from each family were selected to represent different activity patterns: a long commuter, another engaged in some activities outside the home during the day but with no routine long commutes, and one staying at or near the home most of the day.	1998-1999	90 (0.32)	0.52	ND to 2.6	NR	--	56224	(Serrano-Trespalacios et al., 2004)	High
Surface Water (µg/L)											
US	Anchorage, AK	*Background* Chester Creek (6 urban sampling sites)	1998-2001	11 (0)	0.08	All samples ND	ND	--	3975042	(USGS, 2006)	Medium
US	Nationwide	*Background* Surface water for drinking water sources (rivers and reservoirs)	1999-2000	375 (0.008)	0.2	ND to 2.0	NR	NR	3975046	(USGS, 2003)	Medium
US	Nationwide	*Background* Urban Rivers (26 sites, as part of the NAWQA Program)	1996-2000	711 (0.41)	NR	NR	0.09 (median)	NR	1391354	(Robinson et al., 2004)	Medium
US	Boston, MA	*Background* Charles Rivers	1998-2000	29 (1)	NR	NR to 17.3	1.17 (median)	NR	1391354	(Robinson et al., 2004)	Medium

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US	NR	*Background* Gulf of Mexico, near mouth of the Mississippi River and on the Louisiana Shelf (11 stations in the open ocean and coast representing both unpolluted and anthropogenic influences)	1980	11 (0.27)	NR	ND to 0.05	NR	NR	4152375	(Sauer, 1981)	Medium
US	Two Bridges, NJ	*Background* Passaic River	1996-1998	10 (0.4)	NR	NR	0.1 (median)	NR	1391354	(Robinson et al., 2004)	Medium
US to CL	NR	*Background* Eastern Pacific Ocean (California, US to Valparaiso, Chile)	1979-1981	30 (0.9)	0.0001	ND to 0.0007	0.3 (mean); 0.0002 (median)	0.002	29192	(Singh et al., 1983)	Medium
US	Baton Rouge, LA (Ethyl Corporation[a]);	*Near Facility* Stream samples (surface) collected upstream and downstream of the outfall.	1976	2 (1.0)	NR	0.4 to 37	NR	NR	29263	(U.S. EPA, 1977)	High
US	Freeport, TX (Dow Chemical Plant[a])	*Near Facility (methylchloroform producer)* Stream samples (bottom and surface) collected from the receiving stream at the plant outfall and upstream and downstream of the outfall.	1976	6 (1.0)	NR	0.9 to 126	NR	NR	29263	(U.S. EPA, 1977)	High
US	Geismar, LA (Vulcan Materials Plant[a])	*Near Facility (methylchloroform producer)* 3 surface water samples collected from the receiving stream at the plant outfall and upstream and downstream of the outfall.	1976	3 (1.0)	NR	5 to 74	NR	NR	29263	(U.S. EPA, 1977)	High
US	Lake Charles, LA (PPG Industries[a])	*Near Facility (methylchloroform producer)* Stream samples (bottom and surface) collected from the receiving stream	1976	5 (1.0)	NR	29 to 447	282 (mean); 353 (median)	156	29263	(U.S. EPA, 1977)	High

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		at the plant outfall and upstream and downstream of the outfall.									
US	Auburn, WA (Boeing Company[a])	*Near Facility (methylchloroform producer)* Stream samples (surface) collected from the receiving stream at outfalls and/or upstream and downstream of the outfall.	1977	5 (1.0)	NR	5 to 30	NR	NR	29263	(U.S. EPA, 1977)	High
CN	NR	*Background* South Yellow Sea (10 stations)	2012	10 (NR)	NR	0.0014 to 0.0072	0.0037 (mean); 0.0035 (median)	0.0015	2532227	(He et al., 2013b)	Medium
CN	NR	*Background* Daliao River (20 sites); heavily industrialized area	2011	20 (0.05)	0.018	ND to 0.022	0.018 (mean)	NR	3488897	(Ma et al., 2014)	High
CN	NR	*Background* Yellow Sea and East China Sea (53 stations)	2011	53 (1.0)	NR	0.00068 to 0.0095	0.0039 (mean)	NR	2128010	(He et al., 2013a)	High
CN	NR	*Background* East China Sea; Seawater (41 stations)	2010	41 (1)	NR	0.0004 to 0.0109	0.0021 (mean)	NR	1940132	(He et al., 2013c)	High
CN	Northwestern Pacific Ocean	*Background* Southern Yellow Sea (15 stations)	2009	15 (1.0)	NR	0.00058 to 0.0055	0.0016 (mean)	NR	2799613	(Yang et al., 2014)	High
ES	North-Western area	*Background* River Duero (11 stations)	2007	11 (NR)	NR	NR to 108.2	48.34 (mean)	NR	3501965	(Blanco and Bécares, 2010)	Medium
GB	Irish Sea	*Background* Liverpool Bay and River Mersey (18 stations)	2006	18 (NR)	NR	0.000025 to 0.044	NR	NR	2277377	(Bravo-Linares et al., 2007)	Medium
CN, KR	Northwest Pacific Ocean	*Background* Yellow Sea and East China Sea (52 stations)	2009-2009	52 (NR)	NR	0.00035 to 0.0099	0.0023 (mean)	NR	3052892	(Yang et al., 2015)	Medium
RU	Kalmykian Steppe	*Background* Rivers, springs, lakes, salt lakes (23 sites); polluted and remote areas	1999-2003	23 (0.96)	0.005	ND to 110	8.8 (mean); 0.025 (median)	28.9	104106	(Weissflog et al., 2004)	Medium

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
PT	Nationwide	*Background* Sea, estuarine, river water and industrial effluents (46 sampling points)	1999-2000	644 (0.20)	0.1	ND to 13	NR	NR	659075	(Martinez et al., 2002)	Medium
BE	Southern North Sea	*Background* Southern Bight, Belgian Continental Shelf, the mouth of the Scheldt estuary, and the Channel (10 stations total)	1998-2000	47 (NR)	NR	NR to 0.27	0.049 (mean); 0.014 (median)	NR	660096	(Huybrechts et al., 2005)	High
EU	NR	*Background* Estuaries of the Scheldt, Thames, Loire, Rhine	1997-1999	73 (NR)	0.0001	ND to 0.1693	NR	NR	3242836	(Christof et al., 2002)	High
GR	Northern Greece	*Background* Rivers (n=4) and lakes (n=5). Rivers sampled at the estuary and near the frontier. Lakes - Vegoritida, Volvi, Vistonida, Large Prespa and Small Prespa. Rivers - Evros, Nestos, Strimonas, and Axios	1996-1998	104 (NR)	0.02	ND to 40	NR	NR	1024859	(Kostopoulou et al., 2000)	High
JP	Osaka	*Background* Rivers in heavily industrialized area (n=10 stations). Wastewater treatments upstream from the sampling sites.	1995-1997	106 (0.97)	0.31	ND to 18.4	3.36 (mean); 2.11 (median)	3.56	2310570	(Yamamoto et al., 2001)	Medium
FR	Paris	*Background* River samples (raw) collected from the River Seine (n=14 stations), River Marne (n=1 station) and River Oise (n=1 station). Wastewater treatment plants are located on the river.	1994-1995	43 (1)	NR	0.019 to 0.974	0.255 (mean); 0.171 (median)	0.218	3587944	(Duclos et al., 2000)	Medium
BE	Southern North Sea and Scheldt Estuary	*Background* Seven sites in the southern North Sea and Scheldt Estuary.	1994-1995	38 (NR)	NR	NR	0.0172 (mean); 0.0088 (median)	NR	644857	(Dewulf et al., 1998)	High
JP	Osaka	*Background*	1993-1995	136 (NR)	NR	NR to 78	0.39	NR	645789	(Yamamoto et al., 1997)	High

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
		Rivers and estuaries (30 sites) in industrialized city									
GB	NR	*Background* Estuaries, docks, channels, bays, and inshore (n=48)	1992	48 (0.35)	NR	0.01 to 0.269	0.028 (mean); 0.01 (median)	0.048	2803418	(Dawes and Waldock, 1994)	Medium
EU	Mersey estuary	*Background* Freshwater input collected from the River Gowy	1987-1989	5 (NR)	NR	NR	2.8 (mean); 0.2 (median)	NR	2802879	(Rogers et al., 1992)	Medium
IT	Emilia-Romagna region	*Background* Canal (n=1) which receives wastewater	1984	6 (0.305)	NR	1.2 to 111	32 (mean)	NR	4149721	(Aggazzotti and Predieri, 1986)	Low
GR	Near Thermaikos and Kavala, Northern Greece	*Background* Seawater collected from Thermaikos Gulf (6 stations; near large city and industrial area) and Kavala Gulf stations (4 stations; near small city and off-shore oil-wells).	1981-1982	10 (1)	NR	0.00026 to 0.0028	0.00124 (mean); 0.00113 (median)	0.92	4149731	(Fytianos et al., 1985)	Low
AQ	Northern Victoria Land	*Background* Five lakes (Carezza Lake, Edmonson Point Lakes, Tarn Flat Lake, Inexpressible Island Lake and Gondwana Lake)	2011-2012	6 (0.5)	0.003	ND to 0.0083	3.35 (mean)	0.00265	2800175	(Insogna et al., 2014)	High
AQ	NR	*Background* Ross Sea	1997-1998	48 (NR)	NR	0.028 to 0.292	0.048 (mean); 0.042 (median)	0.036	2189687	(Zoccolillo et al., 2004)	Medium
AQ	NR	*Background* Lakes at Tarn Flat and Edmonson Point (freshwater lakes)	1998	4 (NR)	NR	0.028 to 0.037	0.031 (mean); 0.029 (median)	0.0037	2189687	(Zoccolillo et al., 2004)	Medium

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
AQ	NR	*Background* Lake water collected from 3 sites (Carezza Lake, Tarn Flat, Inexpressible Island at altitude m 100) and Ice water collected from 3 sites (Corner Glacier, Edmonson Point, Onyx River)	1988-1989	6 (NR)	NR	0.005 to 0.04	NR	NR	3544414	(Zoccolillo and Rellori, 1994)	Medium
AQ	NR	*Background* Lake water collected from 5 sites (Carezza Lake, Edmonson Point at altitude m 190, Tarn Flat, Inexpressible Island at altitude m 100 & altitude m 50) and Ice water collected from 3 sites (Corner Glacier, Inexpressible Island, Wood Bay)	1989-1990	8 (NR)	NR	0.0026 to 0.02	NR	NR	3544414	(Zoccolillo and Rellori, 1994)	Medium
AQ	NR	*Background* Lake water collected from 5 sites (Carezza Lake, Edmonson Point at altitude m 190 & altitude m 20, Tarn Flat, Inexpressible Island at altitude m 100) and Sea water collected from 1 site (Icarus Field)	1990-1991	6 (NR)	NR	0.0012 to 0.0093	NR	NR	3544414	(Zoccolillo and Rellori, 1994)	Medium
Wastewater (µg/L)											
KR	Nation-wide	*Near Facility (27 industrial WWTPs)* Influent	2012	81 (NR)	1	1.0-25.0	1.0 (median)	--	3580141	(Lee et al., 2015)	Medium
KR	Nation-wide	*Near Facility (industrial WWTPs)* Effluent	2012	81 (0)	1	ND	--	--	3580141	(Lee et al., 2015)	Medium

Study Info: The information provided includes the HERO ID and citation; country and year samples collected; number of samples and detection frequency.
Abbreviations: If a value was not reported, it is shown in this table as "--"; ND = not detected at the reported detection limit; GM = geometric mean; NR = Not reported.
The following abbreviations are for countries/continents: AQ = Antarctica; BE = Belgium; CA = Canada; CL = Chile; CN = China; DE = Germany; ES = Spain; EU = Europe; FI = Finland; FR = France; GB = United Kingdom; GR = Greece; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; PT = Portugal; RU = Russia; SG = Singapore; US = United States.

Country	State/City/Region	Site	Year	No. of Samples (Det. Freq.)	Detection Level	Concentration			Reference (HERO ID)		
						Range	Central Tendency	Standard Deviation	HERO	Citation	Data Eval. Score
Parameters: All statistics are shown as reported in the study. All minimum values determined to be less than the detection limit are shown in this table as "ND". If a maximum value was not provided, the highest percentile available is shown (as indicated in parentheses); if a minimum value was not provided, the lowest percentile available is shown (as indicated in parentheses)											

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