

Number of survey sites and the environmental level of dioxins

Unit: Air: pg-TEQ/m³
Water: pg-TEQ/L
Sediment: pg-TEQ/g
Soil: pg-TEQ/g

| environmental mediums | type of survey or site category (water groups) | | | | | | | | | | | | | | Environmental Quality Standard | | | |
|-----------------------|--|----------------------|---------------------|---------------|----------------|------------------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------------------|-------|---------------|-----|
| | | FY1997 | FY1998 | FY1999 | FY2000 | FY2001 | FY2002 | FY2003 | FY2004 | FY2005 | FY2006 | FY2007 | FY2008 | FY2009 | | | | |
| Air | all sites | average | 0.55 | 0.23 | 0.18 | 0.15 | 0.13 | 0.093 | 0.068 | 0.059 | 0.052 | 0.050 | 0.041 | 0.036 | 0.032 | 0.6 | | |
| | | concentration range | 0.010 ~1.4 | 0.0 ~0.96 | 0.0065 ~1.1 | 0.0073 ~1.0 | 0.0090 ~1.7 | 0.0066 ~0.84 | 0.0066 ~0.72 | 0.0083 ~0.55 | 0.0039 ~0.61 | 0.0053 ~0.40 | 0.0042 ~0.58 | 0.0032 ~0.26 | 0.0049 ~0.37 | | | |
| | | (number of sites) | (68) | (458) | (463) | (920) | (979) | (966) | (913) | (892) | (825) | (763) | (740) | (721) | (712) | | | |
| | in general | average | 0.55 | 0.23 | 0.18 | 0.14 | 0.14 | 0.093 | 0.064 | 0.058 | 0.051 | 0.051 | 0.041 | 0.035 | 0.031 | | | |
| | | (number of sites) | (63) | (381) | (353) | (705) | (762) | (731) | (691) | (694) | (628) | (577) | (565) | (538) | (536) | | | |
| | vicinity of sources | average | 0.58 | 0.20 | 0.18 | 0.15 | 0.13 | 0.092 | 0.078 | 0.063 | 0.055 | 0.050 | 0.040 | 0.041 | 0.035 | | | |
| | | (number of sites) | (2) | (61) | (96) | (189) | (190) | (206) | (188) | (161) | (165) | (150) | (148) | (156) | (147) | | | |
| | along road | average | 0.47 | 0.19 | 0.23 | 0.17 | 0.16 | 0.091 | 0.076 | 0.055 | 0.054 | 0.050 | 0.044 | 0.036 | 0.031 | | | |
| | | (number of sites) | (3) | (16) | (14) | (26) | (27) | (29) | (34) | (37) | (32) | (28) | (27) | (27) | (29) | | | |
| Public Water | Water | all sites | average | — | 0.50 | 0.24 | 0.31 | 0.25 | 0.24 | 0.24 | 0.22 | 0.21 | 0.21 | 0.20 | 0.19 | 1 | | |
| | | | concentration range | — | 0.065 ~13 | 0.054 ~14 | 0.012 ~48 | 0.0028 ~27 | 0.010 ~2.7 | 0.020 ~11 | 0.0069 ~4.6 | 0.0070 ~5.6 | 0.014 ~3.2 | 0.0097 ~3.0 | 0.013 ~3.0 | | 0.011 ~3.0 | |
| | | | (number of sites) | — | (204) | (568) | (2,116) | (2,213) | (2,207) | (2,126) | (2,057) | (1,912) | (1,870) | (1,818) | (1,714) | | (1,617) | |
| | | River | average | — | — | 0.40 | 0.36 | 0.28 | 0.29 | 0.27 | 0.25 | 0.24 | 0.23 | 0.25 | 0.23 | | 0.21 | |
| | | | (number of sites) | — | — | (186) | (1,612) | (1,674) | (1,663) | (1,615) | (1,591) | (1,464) | (1,454) | (1,408) | (1,330) | | (1,244) | |
| | | Lakes and Reservoirs | average | — | — | 0.25 | 0.22 | 0.21 | 0.18 | 0.20 | 0.17 | 0.18 | 0.18 | 0.16 | 0.16 | | 0.21 | |
| | (number of sites) | | — | — | (63) | (104) | (95) | (102) | (99) | (100) | (89) | (91) | (91) | (90) | (86) | | | |
| | Sea area | average | — | — | 0.14 | 0.13 | 0.13 | 0.092 | 0.094 | 0.095 | 0.082 | 0.096 | 0.072 | 0.078 | 0.077 | | | |
| | | (number of sites) | — | — | (319) | (400) | (444) | (442) | (412) | (366) | (359) | (325) | (319) | (294) | (287) | | | |
| | Bottom Sediment | all sites | average | — | 8.3 | 5.4 | 9.6 | 8.5 | 9.8 | 7.4 | 7.5 | 6.4 | 6.7 | 7.4 | 7.2 | | 7.1 | 150 |
| | | | concentration range | — | 0.10 ~260 | 0.066 ~140 | 0.0011 ~1,400 | 0.012 ~540 | 0.0087 ~640 | 0.057 ~420 | 0.050 ~1,300 | 0.045 ~510 | 0.056 ~750 | 0.044 ~290 | 0.067 ~540 | | 0.059 ~390 | |
| | | | (number of sites) | — | (205) | (542) | (1,836) | (1,813) | (1,784) | (1,825) | (1,740) | (1,623) | (1,548) | (1,505) | (1,398) | | (1,316) | |
| | | River | average | — | — | 5.0 | 9.2 | 7.3 | 8.5 | 6.3 | 7.1 | 5.6 | 5.8 | 6.6 | 6.5 | | 6.3 | |
| | | | (number of sites) | — | — | (171) | (1,367) | (1,360) | (1,338) | (1,377) | (1,336) | (1,241) | (1,191) | (1,152) | (1,071) | | (1,011) | |
| | | Lakes and Reservoirs | average | — | — | 9.8 | 11 | 18 | 13 | 11 | 9.4 | 8.4 | 9.2 | 10 | 9 | | 10 | |
| (number of sites) | | | — | — | (52) | (102) | (85) | (86) | (89) | (90) | (79) | (84) | (82) | (82) | (75) | | | |
| Sea area | | average | — | — | 4.9 | 11 | 11 | 14 | 11 | 9.0 | 9.2 | 9.7 | 10 | 9 | 10 | | | |
| | | (number of sites) | — | — | (319) | (367) | (368) | (360) | (359) | (314) | (303) | (273) | (271) | (245) | (230) | | | |
| Ground Water | | average | — | 0.17 | 0.096 | 0.092 | 0.074 | 0.066 | 0.059 | 0.063 | 0.047 | 0.056 | 0.055 | 0.048 | 0.055 | 1 | | |
| | | concentration range | — | 0.046 ~5.5 | 0.062 ~0.55 | 0.00081 ~0.89 | 0.00020 ~0.92 | 0.011 ~2.0 | 0.00032 ~0.67 | 0.0079 ~3.2 | 0.0088 ~0.72 | 0.013 ~2.2 | 0.0076 ~2.4 | 0.010 ~0.38 | 0.011 ~0.88 | | | |
| | | (number of sites) | — | (188) | (296) | (1,479) | (1,473) | (1,310) | (1,200) | (1,101) | (922) | (878) | (759) | (634) | (608) | | | |
| Soil | Total | average | — | 6.5 | — | 6.9 | 6.2 | 3.8 | 4.4 | 3.1 | 5.9 | 2.6 | 3.1 | 3.1 | 2.5 | 1,000 | | |
| | | concentration range | — | 0.0015 ~61 | — | 0 ~1,200 | 0 ~4,600 | 0 ~250 | 0 ~1,400 | 0 ~250 | 0 ~2,800 | 0 ~330 | 0 ~170 | 0 ~190 | 0 ~85 | | | |
| | | (number of sites) | — | (286) | — | (3,031) | (3,735) | (3,300) | (3,059) | (2,618) | (1,782) | (1,505) | (1,285) | (1,073) | (976) | | | |
| | in general | average | — | — | — | 4.6 | 3.2 | 3.4 | 2.6 | 2.2 | 2.0 | 1.9 | 2.7 | 2.8 | 2.1 | | | |
| | | (number of sites) | — | — | — | (1,942) | (2,313) | (2,282) | (2,128) | (1,983) | (1,314) | (1,159) | (991) | (831) | (717) | | | |
| | vicinity of sources | average | — | — | — | 11 | 11 | 4.7 | 8.4 | 6.0 | 17 | 5.0 | 4.3 | 4.1 | 3.5 | | | |
| (number of sites) | | — | — | — | (1,089) | (1,422) | (1,018) | (931) | (635) | (468) | (346) | (294) | (242) | (259) | | | | |

(Air)

Note1 This includes the environmental monitoring results under the Air Pollution Control Law(FY 1997-1999)

Note2 It limits to the sites evaluated by environmental standards of annual average.

Note3 I-TEF(1988) had been used for the calculation of toxicity equivalent until FY 1998, WHO-TEF(1998) had been used from FY 1999 to FY 2007 and WHO-TEF(2006) has been used since FY 2008.

Note4 In principle, before FY1998, the toxicity equivalent is calculated by using the value of 1/2 of the detection limit, when the measured value of each isomer is below the detection limit.

(Water quality of public waters and groundwater)

Note1 WHO-TEF(1998) had been used from FY 1999 to FY 2007 and WHO-TEF(2006) has been used since FY 2008.

Note2 The toxicity equivalent is calculated by using the value of 1/2 of the detection limit, when the measured value of each isomer is below the detection limit.

(Soil)

Note1 WHO-TEF(1998) had been used from FY 1999 to FY 2007 and WHO-TEF(2006) has been used since FY2008.

Note2 The toxicity equivalent is calculated as zero, when the measured value of each isomer is below the minimum determination limit.

Note3 Survey sites for each year are not the same.