

Chapter 2 Results of the Detailed Environmental Survey in FY 2006

1. Purpose of the survey

The Detailed Environmental Survey is aimed at understanding the environmental persistence of the Specified Chemical Substances and Monitored Chemical Substances under the Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Law No. 117 of 1973) (hereafter, the Chemical Substances Control Law) and chemicals requiring the Initial Environmental Risk Assessment.

2. Target chemicals

In the FY 2006 Detailed Environmental Survey, 38 chemicals (groups) that were selected and designated as target chemicals. The combinations of target chemicals and surveyed media are given below.

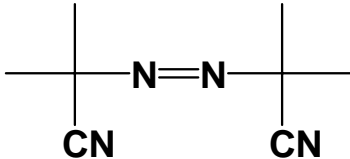
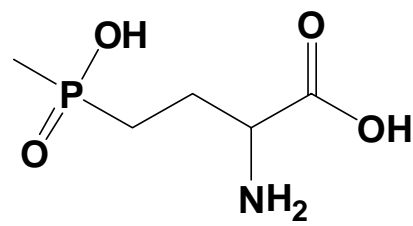
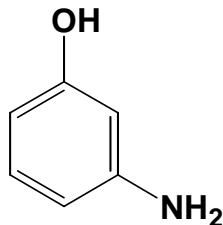
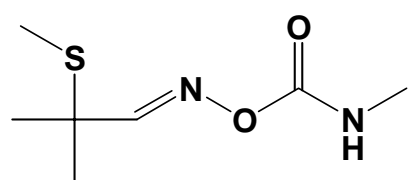
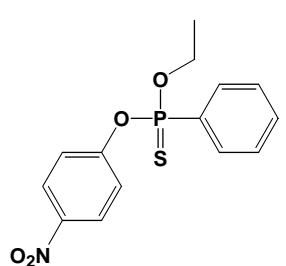
No	Target chemicals Name	Designated Class in		Surveyed media				
		The Chemical Substances Control Law	The PRTR Law	Surface water	Sediment	Wildlife	Air	food
[1]	2,2'-Azobisisobutyronitrile	II Monitored	I					
[2]	2-Amino-4-[hydroxy(methyl)phosphinoyl]butyric acid (synonym: Glufosinate)		I					
[3]	<i>m</i> -Aminophenol	II Monitored III Monitored	I					
[4]	Aldicarb							
[5]	<i>O</i> -Ethyl <i>O</i> -4-nitrophenyl phenylphosphonothioate (synonym: EPN)	II Monitored III Monitored	I					
[6]	<i>N,N'</i> -Ethylenebis(dithiocarbamic acid) and its salt (as a common component of originally targeted chemicals [6-1] ~ [6-3])							
	[6-1] Manganese <i>N,N'</i> -ethylenebis(dithiocarbamate) (synonym: Maneb)		I					
	[6-2] Complex compounds of manganese <i>N,N'</i> -ethylenebis(dithiocarbamate) and zinc <i>N,N'</i> -ethylenebis(dithiocarbamate) (synonym: Mancozeb)		I					
	[6-3] <i>N,N'</i> -Ethylenebis(thiocarbamoylthiozinc) bis(<i>N,N</i> -dimethyldithiocarbamate) (synonym: Polycarbamate)		I					
[7]	2,6-Xylenol	III Monitored	I					
[8]	Chlorobenzene	III Monitored	I					
[9]	Isobutyl acetate							
[10]	Diisopropylnaphthalene	I Monitored						
[11]	<i>S</i> -4-Chlorobenzyl <i>N,N</i> -diethylthiocarbamate (synonym: Thiobencarb)		I					
[12]	3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU)	II Monitored	I					
[13]	2,6-Dichlorobenzonitrile (synonym: Dichlobenil)	II Monitored	I					
[14]	2,4-Di- <i>tert</i> -butyl-6-(5-chloro-2 <i>H</i> -1,2,3-benzotriazol-2-yl)phenol	I Monitored						
[15]	<i>N,N</i> -Dimethyldithiocarbamic acid and its salt (as a common component of originally targeted chemicals [15-1] ~ [15-2])							
	[15-1] Zinc bis(<i>N,N</i> -dimethyldithiocarbamate) (synonym: Ziram)	II Monitored	I					
	[15-2] <i>N,N'</i> -Ethylenebis(thiocarbamoylthiozinc) bis(<i>N,N</i> -dimethyldithiocarbamate) (synonym: Polycarbamate)		I					
[16]	<i>N,N</i> -Dimethyldodecylamine <i>N</i> -oxide		I					
[17]	<i>N,N</i> -Dimethylformamide	II Monitored	I					
[18]	Hydrogenated terphenyl	I Monitored						

Target chemicals		Designated Class in		Surveyed media				
No	Name	The Chemical Substances Control Law	The PRTR Law	Surface water	Sediment	Wildlife	Air	food
[19]	<i>O,O</i> -Diethyl <i>O</i> -2-isopropyl-6-methyl-4-pyrimidinyl phosphorothioate (synonym: Diazinon)	II Monitored III Monitored	I					
[20]	<i>O,O</i> -Dimethyl <i>O</i> -3-methyl-4-nitrophenyl phosphorothioate (synonym: Fenitrothion or MEP)	II Monitored	I					
[21]	Tetrachloroisophthalonitrile (synonym: Chlorothalonil or TPN)	II Monitored	I					
[22]	Tetrahydrofuran							
[23]	Trichloroacetaldehyde	II Monitored	I					
[24]	Trichloronitromethane (synonym: Chloropicrin)	II Monitored	I					
[25]	Nitrofen (synonym: NIP)							
[26]	1,1-Bis(<i>tert</i> -butyldioxy)-3,3,5-trimethylcyclohexane	I Monitored						
[27]	Hydrazine	II Monitored III Monitored	I					
[28]	1-Butanol							
[29]	Furfural							
[30]	2-(2-Benzothiazolyloxy)- <i>N</i> -methylacetanilide (synonym: Mefenacet)		I					
[31]	2-(2 <i>H</i> -1,2,3-Benzotriazol-2-yl)-4,6-di- <i>tert</i> -butylphenol	I Specified						
[32]	Methyl methacrylate		I					
[33]	2-(1-Methylethoxy)ethanol							
[34]	2,3-Dihydro-2,2-dimethyl-7-benzo[b]furan-5-yl <i>N</i> -methylcarbamate (synonym: Carbofuran)	II Monitored III Monitored	I					
[35]	2- <i>sec</i> -Butylphenyl <i>N</i> -methylcarbamate (synonym: Fenobucarb or BPMC)	II Monitored III Monitored	I					
[36]	α -Methylstyrene	III Monitored	I					
[37]	Dimethyl 2,2-dichlorovinyl phosphate (synonym: Dichlorvos or DDVP)	II Monitored III Monitored	I					
[38]	Tributyl phosphate	II Monitored	I (Note 2)					

(Note 1) "The PRTR Law" hereafter means "Substance in the Law Concerning Reporting, etc. of Releases of Specific Chemical Substances to the Environment and Promoting Improvement in Their Management (Law No. 86 of 1999)."

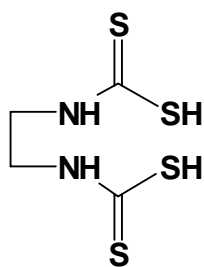
(Note 2) Only as tri-*n*-butyl phosphate is designated.

Chemical and physical properties of target chemicals of the Detailed Environmental Survey are as follows.

<p>[1] 2,2'-Azobisisobutyronitrile</p> 	<p>Molecular formula: C₈H₁₂N₄ CAS: 78-67-1 ENCS: 2-1531 MW: 164.21 mp: 101 ~ 103¹⁾ bp: Uncertain SW: 350mg/L (25¹⁾) Specific gravity: Uncertain logPow: 1.10¹⁾</p>
<p>[2] 2-Amino-4-[hydroxy(methyl)phosphinoyl]butyric acid (synonym: Glufosinate)</p> 	<p>Molecular formula: C₅H₁₂NO₄P CAS: 51276-47-2 ENCS: Uncertain MW: 181.13 mp: 215 (as an ammonium salt)²⁾ bp: Uncertain SW: Readily soluble (25³⁾) Specific gravity: 1.4 (20³⁾) (as an ammonium salt)²⁾ logPow: -3.96⁴⁾</p>
<p>[3] <i>m</i>-Aminophenol</p> 	<p>Molecular formula: C₆H₇NO CAS: 591-27-5 ENCS: 3-675 MW: 109.13 mp: 122 ~ 123⁵⁾ bp: 164 (11mmHg)⁶⁾ SW: 27g/L (25⁷⁾) Specific gravity: 1.20⁸⁾ logPow: 0.21⁹⁾</p>
<p>[4] Aldicarb</p> 	<p>Molecular formula: C₇H₁₄N₂O₂S CAS: 116-06-3 ENCS: Uncertain MW: 190.26 mp: 99 ~ 100⁵⁾ bp: Uncertain SW: 4,930mg/L (20¹⁰⁾) Specific gravity: 1.20 (25/20⁶⁾) logPow: 1.13⁹⁾</p>
<p>[5] <i>O</i>-Ethyl <i>O</i>-4-nitrophenyl phenylphosphonothioate (synonym: EPN)</p> 	<p>Molecular formula: C₁₄H₁₄NO₄PS CAS: 2104-64-5 ENCS: 3-2617 MW: 323.30 mp: 36⁶⁾ bp: 215 (5mmHg)¹⁰⁾ SW: 3.11mg/L (20 ~ 25¹¹⁾) Specific gravity: 1.27 (25⁶⁾) logPow: 4.78¹²⁾</p>

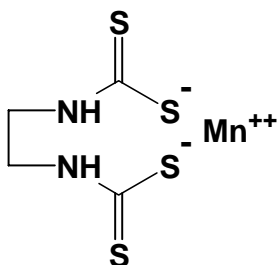
(Abbreviations) CAS: CAS registry number, ENCS: registry number in the Existing and New Chemical Substances List, MW: molecular weight, mp: melting point, bp: boiling point, SW: solubility in water, logPow: *n*-octanol-water partition coefficient.

[6] *N,N'*-Ethylenebis(dithiocarbamic acid) and its salt



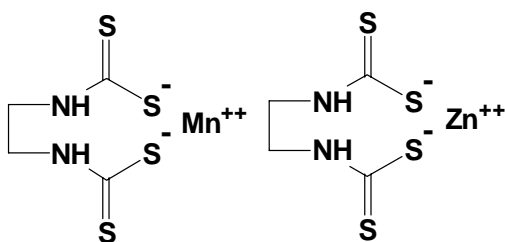
Molecular formula: $C_4H_8N_2S_4$
 CAS: 115-54-6 etc.
 ENCS: 2-1808
 MW: 212.38
 mp: Uncertain
 bp: Uncertain
 SW: 114g/L (25 °C)³⁾
 Specific gravity: Uncertain
 logPow: 0.62⁴⁾

[6-1] Manganese *N,N'*-ethylenebis(dithiocarbamate) (synonym: Maneb)



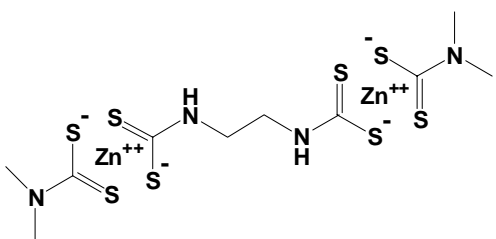
Molecular formula: $C_4H_6MnN_2S_4$
 CAS: 12427-38-2
 ENCS: 2-1841
 MW: 289.32
 mp: 192 ~ 204 (decomposition)¹⁰⁾
 bp: Uncertain
 SW: 6mg/L (25 °C)¹³⁾
 Specific gravity: 1.92 (25/4 °C)¹⁰⁾
 logPow: 0.62⁴⁾

[6-2] Complex compounds of manganese *N,N'*-ethylenebis(dithiocarbamate) and zinc *N,N'*-ethylenebis(dithiocarbamate) (synonym: Mancozeb)



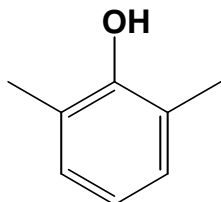
Molecular formula: $C_4H_6MnN_2S_4/C_4H_6N_2S_4Zn$
 CAS: 8018-01-7
 ENCS: 2-2127
 MW: 289.32/299.79
 mp: 192 ~ 204 (decomposition)¹⁰⁾
 bp: Uncertain
 SW: 6.2mg/L (25 °C)¹⁰⁾
 Specific gravity: Uncertain
 logPow: 1.33¹⁰⁾

[6-3] *N,N'*-Ethylenebis(thiocarbamoylthiozinc) bis(*N,N*-dimethyldithiocarbamate) (synonym: Polycarbamate)

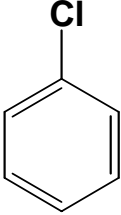
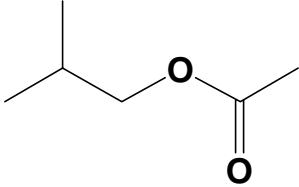
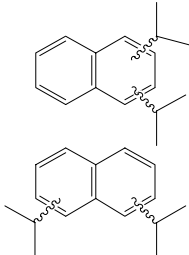
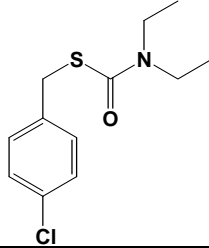
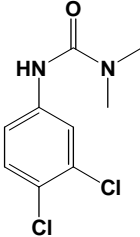


Molecular formula: $C_{10}H_{18}N_4S_8Zn_2$
 CAS: 64440-88-6
 ENCS: 2-1848
 MW: 581.61
 mp: Uncertain
 bp: Uncertain
 SW: Uncertain
 Specific gravity: Uncertain
 logPow: Uncertain

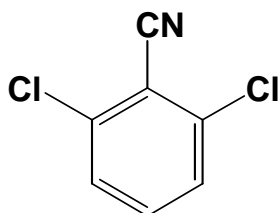
[7] 2,6-Xylenol



Molecular formula: $C_8H_{10}O$
 CAS: 576-26-1
 ENCS: 3-521, 4-57
 MW: 122.16
 mp: 49 °C⁵⁾
 bp: 203 °C⁵⁾
 SW: 6,050mg/L (25 °C)⁷⁾
 Specific gravity: 1.13⁵⁾
 logPow: 2.36⁹⁾

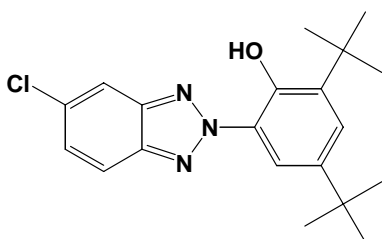
<p>[8] Chlorobenzene</p> 	<p>Molecular formula: C₆H₅Cl CAS: 108-90-7 ENCS: 3-31 MW: 112.56 mp: -45.2 ⁶⁾ bp: 131.7 ⁶⁾ SW: 498mg/L (25 °C)¹⁴⁾ Specific gravity: 1.11 (20 °C)⁶⁾ logPow: 2.89⁹⁾</p>
<p>[9] Isobutyl acetate</p> 	<p>Molecular formula: C₆H₁₂O₂ CAS: 110-19-0 ENCS: 2-731 MW: 116.16 mp: -98.8 ⁶⁾ bp: 116.5 ⁶⁾ SW: 6,300mg/L (25 °C)⁷⁾ Specific gravity: 0.871 (20/4 °C)⁶⁾ logPow: 1.78⁹⁾</p>
<p>[10] Diisopropylnaphthalene</p> 	<p>Molecular formula: C₁₆H₂₀ CAS: 38640-62-9 ENCS: 4-961 MW: 212.33 mp: Uncertain bp: 290 ~ 299 ¹⁾ SW: 0.11mg/L (25 °C)¹⁵⁾ Specific gravity: 0.96 (25 °C)⁶⁾ logPow: 6.08⁴⁾</p>
<p>[11] S-4-Chlorobenzyl N,N-diethylthiocarbamate (synonym: Thiobencarb)</p> 	<p>Molecular formula: C₁₂H₁₆ClNOS CAS: 28249-77-6 ENCS: Uncertain MW: 257.78 mp: 3.3 ¹⁰⁾ bp: 126 ~ 129 (0.0008mmHg)⁶⁾ SW: 28mg/L (25 °C)¹³⁾ Specific gravity: 1.15 ~ 1.18 (20 °C)¹⁰⁾ logPow: 3.40⁹⁾</p>
<p>[12] 3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU)</p> 	<p>Molecular formula: C₉H₁₀Cl₂N₂O CAS: 330-54-1 ENCS: 3-2194 MW: 233.09 mp: 158 ~ 159 ⁵⁾ bp: 180 ~ 190 (decomposition)²⁾ SW: 36.4mg/L (25 °C)¹⁰⁾ Specific gravity: Uncertain logPow: 2.68⁹⁾</p>

[13] 2,6-Dichlorobenzonitrile (synonym: Dichlobenil)



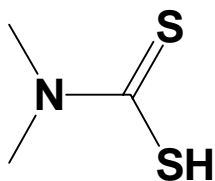
Molecular formula: $C_7H_3Cl_2N$
 CAS: 1194-65-6
 ENCS: 3-4103
 MW: 172.01
 mp: 144 ~ 145
 bp: 270 ¹⁰⁾
 SW: 14.6mg/L (20 ¹⁰⁾)
 Specific gravity: Uncertain
 logPow: 2.74⁹⁾

[14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol



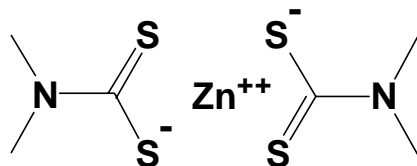
Molecular formula: $C_{20}H_{24}ClN_3O$
 CAS: 3864-99-1
 ENCS: 5-3581, 5-3605
 MW: 357.88
 mp: Uncertain
 bp: Uncertain
 SW: Uncertain
 Specific gravity: Uncertain
 logPow: Uncertain

[15] *N,N*-Dimethyldithiocarbamic acid and its salt



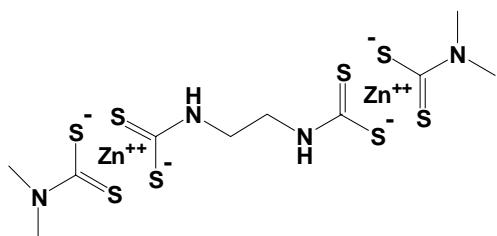
Molecular formula: $C_3H_7NS_2$
 CAS: 79-45-8 etc.
 ENCS: 2-1798
 MW: 121.22
 mp: Uncertain
 bp: Uncertain
 SW: Uncertain
 Specific gravity: Uncertain
 logPow: Uncertain

[15-1] Zinc bis(*N,N*-dimethyldithiocarbamate) (synonym: Ziram)



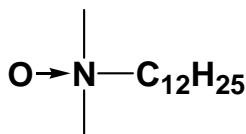
Molecular formula: $C_6H_{12}N_2S_4Zn$
 CAS: 137-30-4
 ENCS: 2-1833, 9-607
 MW: 305.84
 mp: 249²⁶⁾
 bp: Uncertain
 SW: 65mg/L (25 ²⁾)
 Specific gravity: 1.66 (25/4 ²⁷⁾)
 logPow: 1.23¹⁰⁾

[15-2] *N,N'*-Ethylenebis(thiocarbamoylthiozinc) bis(*N,N*-dimethyldithiocarbamate) (synonym: Polycarbamate)



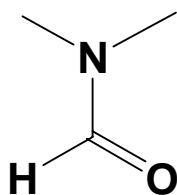
Molecular formula: $C_{10}H_{18}N_4S_8Zn_2$
 CAS: 64440-88-6
 ENCS: 2-1848
 MW: 581.61
 mp: Uncertain
 bp: Uncertain
 SW: Uncertain
 Specific gravity: Uncertain
 logPow: Uncertain

[16] *N,N*-Dimethyldodecylamine *N*-oxide



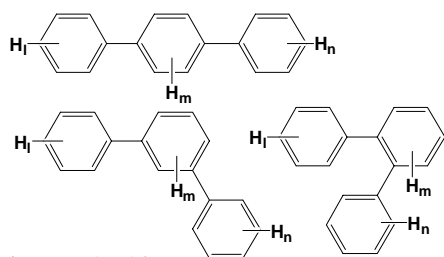
Molecular formula: C₁₄H₃₁NO
 CAS: 1643-20-5
 ENCS: 2-198
 MW: 229.40
 mp: 132 ~ 133 ¹⁶⁾
 bp: Uncertain
 SW: 190g/L (25 °C)¹⁷⁾
 Specific gravity: Uncertain
 logPow: 4.67⁴⁾

[17] *N,N*-Dimethylformamide



Molecular formula: C₃H₇NO
 CAS: 68-12-2
 ENCS: 2-680
 MW: 73.09
 mp: -61 ⁵⁾
 bp: 153 ⁵⁾
 SW: Readily soluble⁵⁾
 Specific gravity: 0.945 (20/4 °C)⁵⁾
 logPow: -1.01⁹⁾

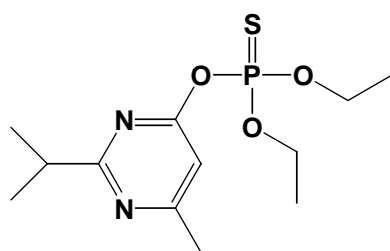
[18] Hydrogenated terphenyl



$l+m+n=1 \sim 14$

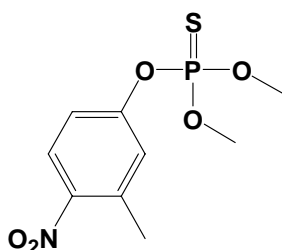
Molecular formula: C₁₈H_(14+i) (i = l+m+n = 1 ~ 14)
 CAS: 61788-32-7
 ENCS: 4-41
 MW: 232.32 ~ 248.45
 mp: dependent on the molecule
 bp: dependent on the molecule
 SW: dependent on the molecule
 Specific gravity: dependent on the molecule
 logPow: dependent on the molecule

[19] *O,O*-Diethyl *O*-2-isopropyl-6-methyl-4-pyrimidinyl phosphorothioate (synonym: Diazinon)



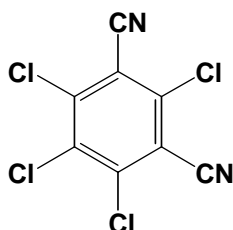
Molecular formula: C₁₂H₂₁N₂O₃PS
 CAS: 333-41-5
 ENCS: 5-923
 MW: 304.35
 mp: <25 ⁵⁾
 bp: 83 ~ 84 (0.002mmHg)⁵⁾
 SW: 40mg/L (25 °C)¹⁸⁾
 Specific gravity: 1.12 (20/4 °C)⁵⁾
 logPow: 3.81⁹⁾

[20] *O,O*-Dimethyl *O*-3-methyl-4-nitrophenyl phosphorothioate (synonym: Fenitrothion or MEP)



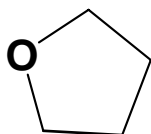
Molecular formula: C₉H₁₂NO₅PS
 CAS: 122-14-5
 ENCS: 3-2616
 MW: 277.23
 mp: 3.4 ¹⁹⁾
 bp: 118 (0.05mmHg)⁵⁾
 SW: 38mg/L (25 °C)²⁰⁾
 Specific gravity: 1.32 (20/4 °C)⁵⁾
 logPow: 3.30⁹⁾

[21] Tetrachloroisophthalonitrile (synonym: Chlorothalonil or TPN)



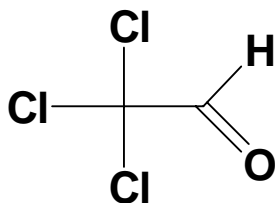
Molecular formula: $C_8Cl_4N_2$
CAS: 1897-45-6
ENCS: 3-1805
MW: 265.91
mp: 250 ~ 251 ¹⁰⁾
bp: 350 ¹⁰⁾
SW: 0.81mg/L (25 ¹⁰⁾)
Specific gravity: 1.8 (25/4 ¹⁰⁾)
logPow: 3.05²¹⁾

[22] Tetrahydrofuran



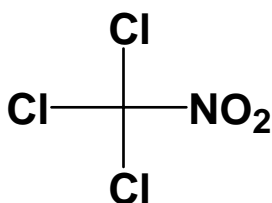
Molecular formula: C_4H_8O
CAS: 109-99-9
ENCS: 5-53
MW: 72.11
mp: -108.3 ⁶⁾
bp: 65 ⁶⁾
SW: Readily soluble (20 ²²⁾)
Specific gravity: 0.889 (20/4 ⁶⁾)
logPow: 0.46⁹⁾

[23] Trichloroacetaldehyde



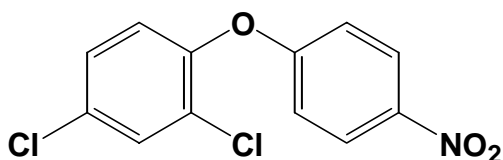
Molecular formula: C_2HCl_3O
CAS: 75-87-6
ENCS: 2-528
MW: 147.39
mp: -57.5 ⁵⁾
bp: 97.8 ⁵⁾
SW: Readily soluble (25 ¹²⁾)
Specific gravity: 1.51 (20/4 ⁶⁾)
logPow: 0.99⁹⁾

[24] Trichloronitromethane (synonym: Chloropicrin)



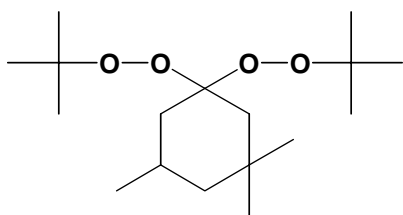
Molecular formula: CCl_3NO_2
CAS: 76-06-2
ENCS: 2-199
MW: 164.38
mp: -64 ⁵⁾
bp: 112 ⁵⁾
SW: 1,620mg/L (25 ⁷⁾)
Specific gravity: 1.66 (20/4 ⁵⁾)
logPow: 2.09⁹⁾

[25] Nitrofen (synonym: NIP)



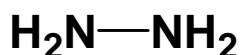
Molecular formula: $C_{12}H_7Cl_2NO_3$
CAS: 1836-75-5
ENCS: 3-658
MW: 284.09
mp: 70 ~ 71 ²³⁾
bp: Uncertain
SW: 1mg/L (22 ⁷⁾)
Specific gravity: 1.3²⁴⁾
logPow: 4.64²⁵⁾

[26] 1,1-Bis(*tert*-butyldioxy)-3,3,5-trimethylcyclohexane



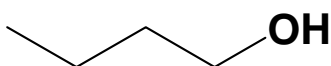
Molecular formula: C₁₇H₃₄O₄
 CAS: 6731-36-8
 ENCS: 3-2341
 MW: 302.45
 mp: -30⁶⁾
 bp: 63⁶⁾
 SW: 0.6mg/L¹²⁾
 Specific gravity: Uncertain
 logPow: 6.53¹²⁾

[27] Hydrazine



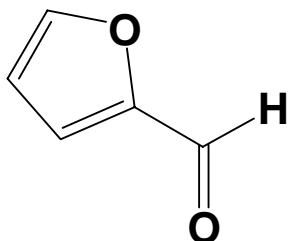
Molecular formula: H₄N₂
 CAS: 302-01-2
 ENCS: 1-374
 MW: 32.05
 mp: 2.0⁵⁾
 bp: 113.5⁵⁾
 SW: Readily soluble²⁸⁾
 Specific gravity: 1.00 (25/4)⁵⁾
 logPow: -2.07⁹⁾

[28] 1-Butanol



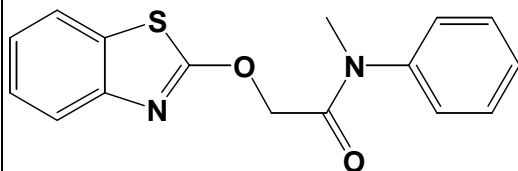
Molecular formula: C₄H₁₀O
 CAS: 71-36-3
 ENCS: 2-3049
 MW: 74.12
 mp: -89.8⁶⁾
 bp: 117.7⁶⁾
 SW: 63.2g/L (25)²⁹⁾
 Specific gravity: 0.810 (20/4)⁶⁾
 logPow: 0.88⁹⁾

[29] Furfural



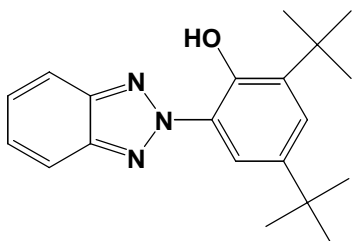
Molecular formula: C₅H₄O₂
 CAS: 98-01-1
 ENCS: 5-40
 MW: 96.08
 mp: -38.1⁶⁾
 bp: 161.7⁶⁾
 SW: 74.1g/L (25)⁷⁾
 Specific gravity: 1.16 (25/4)⁶⁾
 logPow: 0.41⁹⁾

[30] 2-(2-Benzothiazolyloxy)-*N*-methylacetanilide (synonym: Mefenacet)



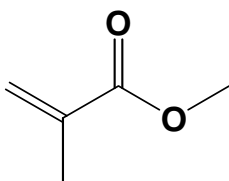
Molecular formula: C₁₆H₁₄N₂O₂S
 CAS: 73250-68-7
 ENCS: Uncertain
 MW: 298.36
 mp: 134.8⁵⁾
 bp: Uncertain
 SW: 4mg/L (20)²⁰⁾
 Specific gravity: Uncertain
 logPow: 3.23¹⁰⁾

[31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol



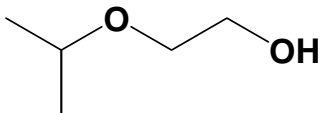
Molecular formula: C₂₀H₂₅N₃O
 CAS: 3846-71-7
 ENCS: 5-3580, 5-3604
 MW: 323.43
 mp: Uncertain
 bp: Uncertain
 SW: Uncertain
 Specific gravity: Uncertain
 logPow: 6.23⁹⁾

[32] Methyl methacrylate



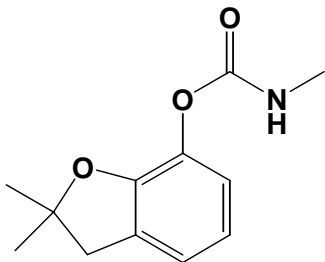
Molecular formula: C₅H₈O₂
 CAS: 80-62-6
 ENCS: 2-1036
 MW: 100.12
 mp: -48 ⁶⁾
 bp: 105.5 ⁶⁾
 SW: 15.9mg/L (25 ⁷⁾)
 Specific gravity: 0.944 (20/4 ⁶⁾)
 logPow: 1.38⁹⁾

[33] 2-(1-Methylethoxy)ethanol



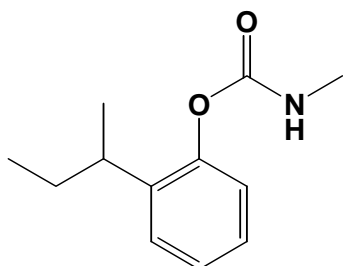
Molecular formula: C₅H₁₂O₂
 CAS: 109-59-1
 ENCS: 2-410, 2-2424
 MW: 104.15
 mp: Uncertain
 bp: 145 ⁶⁾
 SW: Readily soluble⁶⁾
 Specific gravity: 0.903 (20/4 ⁶⁾)
 logPow: 0.05⁹⁾

[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furanyl *N*-methylcarbamate (synonym: Carbofuran)



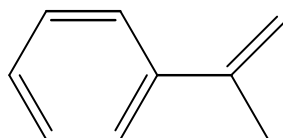
Molecular formula: C₁₂H₁₅NO₃
 CAS: 1563-66-2
 ENCS: 5-5540
 MW: 221.25
 mp: 151 ⁶⁾
 bp: Uncertain
 SW: 320mg/L (25 ¹⁸⁾)
 Specific gravity: 1.18 (20 ⁶⁾)
 logPow: 2.32⁹⁾

[35] 2-*sec*-Butylphenyl *N*-methylcarbamate; (synonym: Fenobucarb or BPMC)



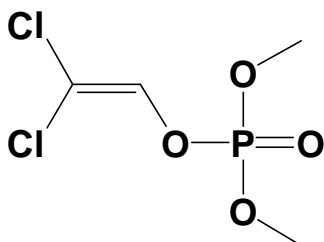
Molecular formula: C₁₂H₁₇NO₂
 CAS: 3766-81-2
 ENCS: 3-2211
 MW: 207.27
 mp: 32 ~ 33 ¹⁰⁾
 bp: 60 ~ 65 ³⁰⁾
 SW: 420mg/L (20 ¹⁰⁾)
 Specific gravity: Uncertain
 logPow: 2.78⁹⁾

[36] α -Methylstyrene



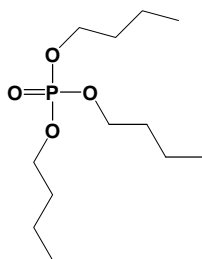
Molecular formula: C_9H_{10}
 CAS: 98-83-9
 ENCS: 3-5, 3-8
 MW: 118.18
 mp: -23.2 ⁶⁾
 bp: 165.4 ⁶⁾
 SW: 116mg/L (25)⁷⁾
 Specific gravity: 0.911 (20/4)⁶⁾
 logPow: 3.48 ⁹⁾

[37] Dimethyl 2,2-dichlorovinyl phosphate (synonym: Dichlorvos or DDVP)



Molecular formula: $C_4H_7Cl_2O_4P$
 CAS: 62-73-7
 ENCS: 2-3224
 MW: 220.98
 mp: <-60 ²⁶⁾
 bp: 140 (20mmHg)³¹⁾
 SW: 8g/L (20)²⁾
 Specific gravity: 1.42 (25/4)⁶⁾
 logPow: 1.47 ³²⁾

[38] Tributyl phosphate



Molecular formula: $C_{12}H_{27}O_4P$
 CAS: 126-73-8
 ENCS: 2-2021
 MW: 266.31
 mp: <-80 ³³⁾
 bp: 289 ⁶⁾
 SW: 280mg/L (25)³⁴⁾
 Specific gravity: 0.973 ⁶⁾
 logPow: 4.00 ⁹⁾

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3. Surveyed site and procedure

In the Detailed Environmental Survey (of surface water, sediment, wildlife, and air), the sampling and analysis of specimens was entrusted to prefectural governments and government-designated cities across Japan, and some specimens were analysed by private analytical laboratories. In the survey of surface water for target chemicals [2], [6], and [15] (mainly used as pesticides), the water was sampled taking into consideration the time of pesticide spraying.

In the Detailed Environmental Survey (of food), specimens were sampled and analysed by private analytical laboratories.

- Survey by market basket method: Market food was surveyed in two regions: Kanto and Kinki. Based on the FY 2004 National Health and Nutrition Survey and its basic data on food intake, according to food groups, food items are classified into 14 groups, and the food contents and their quantities were determined on a daily basis. The food items purchased from grocery stores were treated by the standard method and then rapidly mixed on food group bases and homogenised using a stainless-steel mixer. The mixture is stored in a sealed container, and then used as the sample.
- Survey for domestic food by *Kagezen* method: Japan is divided into 10 regions with 5 selected households per region. The specimens are sampled from meals in three days for each household in a *kagezen* method (the subject household is asked to prepare an extra serving for survey). The specimens from meals in one day (three meals + between-meal snack + beverages) are transferred to a sampling container (acetone-cleaned lidded stainless-steel 3L container), and the closed container is stored in a refrigerator. The meals sampled for 3 consecutive days are treated together, partially thawed, and then rapidly mixed and homogenised using a stainless-steel mixer, taking the greatest care against contamination. The mixture is stored in a sealed container, and then used as the sample.
- Survey for individual food: Instant foods and restaurant food are prepared by the same method as that used for *Kagezen* food.

(1) Organisations responsible for sampling

Local communities	Organisations responsible for sampling	Surveyed media			
		Surface water	Sediment	Wildlife	Air
Hokkaido	Hokkaido Institute of Environmental Sciences				
Sapporo City	Sapporo City Institute of Public Health				
Iwate Pref.	Research Institute for Environmental Sciences and Public Health of Iwate Prefecture				
Miyagi Pref.	Miyagi Prefectural Institute of Public Health and Environment				
Sendai City	Sendai City Institute of Public Health				
Yamagata Pref.	Environmental Science Research Center of Yamagata Prefecture				
Ibaraki Pref.	Ibaraki Kasumigaura Environmental Science Center				
Tochigi Pref.	Tochigi Prefectural Institute of Public Health and Environmental Science				
Saitama Pref.	Center for Environmental Science in Saitama				
Chiba Pref.	Chiba Prefectural Environmental Research Center				
Tokyo	Tokyo Metropolitan Research Institute for Environmental Protection				
Kanagawa Pref.	Kanagawa Environmental Research Center				
Yokohama City	Yokohama Environmental Science Research Institute				
Kawasaki City	Kawasaki Municipal Research Institute for Environmental Protection				
Niigata Pref.	Niigata Prefectural Institute of Public Health and Environmental Sciences				
Ishikawa Pref.	Ishikawa Prefectural Institute of Public Health and Environmental Science				
Nagano Pref.	Nagano Environmental Conservation Research Institute				
Shizuoka Pref.	Shizuoka Institute of Environment and Hygiene				
Gifu Pref.	Gifu Prefectural Research Institute for Health and Environmental Sciences				
Aichi Pref.	Aichi Environmental Research Center				
Mie Pref.	Mie Prefectural Science and Technology Promotion Center				
Shiga Pref.	Lake Biwa Environmental Research Institute				
Kyoto Pref.	Kyoto Prefectural Institute of Public Health and Environment				
Kyoto City	Kyoto City Institute of Health and Environmental Sciences				
Osaka Pref.	Osaka Prefecture Environmental Pollution Control Center				
Osaka City	Osaka City Institute of Public Health and Environmental Sciences				
Hyogo Pref.	Hyogo Prefectural Institute of Public Health and Environmental Sciences				
Kobe City	Environmental Conservation and Guidance Division, Environment Bureau				
Wakayama Pref.	Wakayama Prefectural Research Center of Environment and Public Health				
Shimane Pref.	Shimane Prefectural Institute of Public Health and Environmental Science				
Okayama Pref.	Okayama Prefectural Institute for Environmental Science and Public Health				
Hiroshima Pref.	Hiroshima Prefectural Institute of Public Health and Environment				
Hiroshima City	Hiroshima City Institute of Public Health				
Yamaguchi Pref.	Yamaguchi Prefectural Institute of Public Health and Environment				
Tokushima Pref.	Tokushima Prefectural Institute of Public Health and Environmental Sciences				
Kagawa Pref.	Kagawa Prefectural Research Institute for Environmental Sciences and Public Health				

Local communities	Organisations responsible for sampling	Surveyed media			
		Surface water	Sediment	Wildlife	Air
Ehime Pref.	Ehime Prefectural Institute of Public Health and Environmental Science				
Fukuoka Pref.	Fukuoka Institute of Health and Environmental Science				
Fukuoka City	Fukuoka City Institute for Hygiene and the Environment				
Saga Pref.	Saga Prefectural Environmental Research Center				
Kagoshima Pref.	Kagoshima Prefectural Institute for Environmental Research and Public Health				

(Note) Organisations responsible for sampling are described by their official names in FY 2006.

(2) Surveyed sites (or areas) and target chemicals

Surveyed sites and target chemicals for surface water are shown in Table 2-1-1 and Figure 2-1-1. Surveyed sites and target chemicals for sediment are shown in Table 2-1-2 and Figure 2-1-1. Surveyed areas and target chemicals for wildlife are shown in Table 2-1-3 and Figure 2-1-2. Surveyed sites and target chemicals for air are shown in Table 2-1-4 and Figure 2-1-3. The breakdown is summarized as follows.

Surveyed media	Numbers of local communities	Numbers of target chemicals (groups)	Numbers of surveyed sites (or areas)	Numbers of samples at a surveyed site (or area)
Surface water	29	22	37	3 ¹
Sediment	10	7	13	3
Wildlife	14	11	15	3
Air	14	7	15	3
Surface water	-	2	-	178 ²

(Note 1) For target chemicals [2], [6] and [15], 9 specimens were sampled during 3 days taking into consideration the time of pesticide spraying at Katta-bashi Bridge, Riv. Naka (Hitachinaka City) in Ibaraki Pref., Sakae-bashi Bridge, Riv. Tone (Tone Town) in Ibaraki Pref., Kamenoko-bashi Bridge, Riv. Tsurumi (Yokohama City) in Yokohama City, Mouth of Riv. Yamato (Osaka City, Sakai City) in Osaka Pref., and Mishima area, Riv. Iwamatsu (Uwajima City) in Ehime Pref.

(Note 2) Total sample number

Table 2-1-1 (1/2) List of surveyed sites (surface water) and target chemicals in the Detailed Environmental Survey in FY 2006

Local communities	Surveyed areas	Target chemicals											
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[10]	[11]	[12]	[14]	
Hokkaido	Ishikarikakokyo Bridge, Mouth of Riv. Ishikari (Ishikari City)												
Sapporo City	Azuma-bashi Bridge, Riv. Toyohira (Sapporo city)												
Iwate Pref.	Riv. Toyosawa (Hanamaki City)												
Miyagi Pref.	Miya-ohashi Bridge, Riv. Matsukawa (Zao Town)												
Sendai City	Hirose-ohashi Bridge, Riv. Hirose (Sendai City)												
Yamagata Pref.	Mouth of Riv. Mogami (Sakata City)												
Ibaraki Pref.	Katta-bashi Bridge, Riv. Naka (Hitachinaka City)												
	Sakae-bashi Bridge, Riv. Tone (Tone Town)												
Tochigi Pref.	Riv. Tagawa (Utsunomiya City)												
Saitama Pref.	Shiki-ohashi Bridge, Riv. Yanase (Shiki City)												
	Asahi-bashi Bridge, Riv. Shingashi (Kawagoe City)												
	Kachi-hashii Bridge, Riv. Ichino (Yoshimi Town)												
Chiba Pref.	Coast of Ichihara and Anegasaki												
Yokohama City	Kamenoko-bashi Bridge, Riv. Tsurumi (Yokohama City)												
Kawasaki City	Mouth of Riv. Tama (Kawasaki City)												
	Keihin Canal in Port of Kawasaki												
Niigata Pref.	Lower Riv. Shinano (Niigata City)												
Ishikawa Pref.	Mouth of Riv. Sai (Kanazawa City)												
Nagano Pref.	Lake Suwa (center)												
Aichi Pref.	Nagoya Port												
Mie Pref.	Yokkaichi Port												
Kyoto City	Miyamae Bridge, Riv. Katsura (Kyoto City)												
Osaka Pref.	Mouth of Riv. Yamato (Sakai City)												
	Mouth of Riv. Yamato (Osaka City, Sakai City)												
Osaka City	Kema-bashi Bridge, Riv. Oh-kawa (Osaka City)												
	Osaka Port												
Hyogo Pref.	Ibogawa-ohashi Bridge, Riv. Ibo (Tatsuno City)												
Kobe City	Kobe Port (center)												
Wakayama Pref.	Kinokawa-ohashi Bridge, Mouth of Riv. Kinokawa (Wakayama City)												
Okayama Pref.	Offshore of Mizushima												
Yamaguchi Pref.	Tokuyama Bay												
	Offshore of Hagi												
Ehime Pref.	Mishima area, Riv. Iwamatsu (Uwajima City)												
Fukuoka Pref.	Kabura-bashi Bridge, River Raizan (Maebaru City)												
	Offshore of Omuta												
Fukuoka City	Hakata Bay												
Saga Pref.	Imari Bay												

[1] 2,2'-Azobisisobutyronitrile, [2] 2-Amino-4-[hydroxy(methyl)phosphinoyl]butyric acid (synonym: Glufosinate), [3] *m*-Aminophenol, [4] Aldicarb, [5] *O*-Ethyl *O*-4-nitrophenyl phenylphosphonothioate (synonym: EPN), [6] *N,N'*-Ethylenebis(dithiocarbamic acid) and its salt, [7] 2,6-Xylenol, [10] Diisopropylnaphthalene, [11] *S*-4-Chlorobenzyl *N,N*-diethylthiocarbamate (synonym: Thiobencarb), [12] 3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU), [14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol

Table 2-1-1 (2/2) List of surveyed sites (surface water) and target chemicals in the Detailed Environmental Survey in FY 2006

Local communities	Surveyed sites	Target chemicals												
		[15]	[19]	[20]	[21]	[23]	[30]	[31]	[32]	[35]	[37]	[38]		
Hokkaido	Ishikarikakokyo Bridge, Mouth of Riv. Ishikari (Ishikari City)													
Sapporo City	Azuma-bashi Bridge, Riv. Toyohira (Sapporo city)													
Iwate Pref.	Riv. Toyosawa (Hanamaki City)													
Miyagi Pref.	Miya-ohashi Bridge, Riv. Matsukawa (Zao Town)													
Sendai City	Hirose-ohashi Bridge, Riv. Hirose (Sendai City)													
Yamagata Pref.	Mouth of Riv. Mogami (Sakata City)													
Ibaraki Pref.	Katta-bashi Bridge, Riv. Naka (Hitachinaka City)													
	Sakae-bashi Bridge, Riv. Tone (Tone Town)													
Tochigi Pref.	Riv. Tagawa (Utsunomiya City)													
Saitama Pref.	Shiki-ohashi Bridge, Riv. Yanase (Shiki City)													
	Asahi-bashi Bridge, Riv. Shingashi (Kawagoe City)													
	Kachi-hashhi Bridge, Riv. Ichino (Yoshimi Town)													
Chiba Pref.	Coast of Ichihara and Anegasaki													
Yokohama City	Kamenoko-bashi Bridge, Riv. Tsurumi (Yokohama City)													
Kawasaki City	Mouth of Riv. Tama (Kawasaki City)													
	Keihin Canal, Port of Kawasaki													
Niigata Pref.	Lower Riv. Shinano (Niigata City)													
Ishikawa Pref.	Mouth of Riv. Sai (Kanazawa City)													
Nagano Pref.	Lake Suwa (center)													
Aichi Pref.	Nagoya Port													
Mie Pref.	Yokkaichi Port													
Kyoto City	Miyamae Bridge, Riv. Katsura (Kyoto City)													
Osaka Pref.	Mouth of Riv. Yamato (Sakai City)													
	Mouth of Riv. Yamato (Osaka City, Sakai City)													
Osaka City	Kema-bashi Bridge, Riv. Oh-kawa (Osaka City)													
	Osaka Port													
Hyogo Pref.	Sakae-bashi Bridge, Riv. Tone (Tone Town)													
Kobe City	Kobe Port (center)													
Wakayama Pref.	Kinokawa-ohashi Bridge, Mouth of Riv. Kinokawa (Wakayama City)													
Okayama Pref.	Offshore of Mizushima													
Yamaguchi Pref.	Tokuyama Bay													
	Offshore of Hagi													
Ehime Pref.	Mishima area, Riv. Iwamatsu (Uwajima City)													
Fukuoka Pref.	Kabura-bashi Bridge, River Raizan (Maebaru City)													
	Offshore of Omuta													
Fukuoka City	Hakata Bay													
Saga Pref.	Imari Bay													

[15] *N,N*-Dimethyldithiocarbamic acid and its salt, [19] *O,O*-Diethyl *O*-2-isopropyl-6-methyl-4-pyrimidinyl phosphorothioate (synonym: Diazinon), [20] *O,O*-Dimethyl *O*-3-methyl-4-nitrophenyl phosphorothioate (synonym: Fenitrothion or MEP), [21] Tetrachloroisophthalonitrile (synonym: Chlorothalonil or TPN), [23] Trichloroacetaldehyde, [30] 2-(2-Benzothiazolyloxy)-*N*-methylacetanilide (synonym: Mefenacet), [31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol, [32]Methyl methacrylate, [35] 2-*sec*-Butylphenyl *N*-methylcarbamate; (synonym: Fenobucarb or BPMC), [37]Dimethyl 2,2-dichlorovinyl phosphate (synonym: Dichlorvos or DDVP), [38]Tributyl phosphate

Table 2-1-2 List of surveyed sites (sediment) and target chemicals in the Detailed Environmental Survey in FY 2006

Local communities	Surveyed sites	Target chemicals						
		[4]	[8]	[14]	[16]	[17]	[31]	[36]
Yamagata Pref.	Mouth of Riv. Mogami (Sakata City)							
Kawasaki City	Mouth of Riv. Tama (Kawasaki City)							
	Keihin Canal in Kawasaki Port							
Shizuoka Pref.	Shimizu Port							
Aichi Pref.	Nagoya Port							
Mie Pref.	Yokkaichi Port							
Osaka Pref.	Mouth of Riv. Yamato (Sakai City)							
Osaka City	Kema-bashi Bridge, Riv. Oh-kawa (Osaka City)							
	Osaka Port							
Hyogo Pref.	Tatsumi-bashi Bridge, Riv. Samondo (Amagasaki City)							
Hiroshima Pref.	Kure Port							
Yamaguchi Pref.	Tokuyama Bay							
	Offshore of Hagi							

[4] Aldicarb, [8] Chlorobenzene, [14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol, [16] *N,N*-Dimethyldodecylamine *N*-oxide, [17] *N,N*-Dimethylformamide, [31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol, [36] α -Methylstyrene

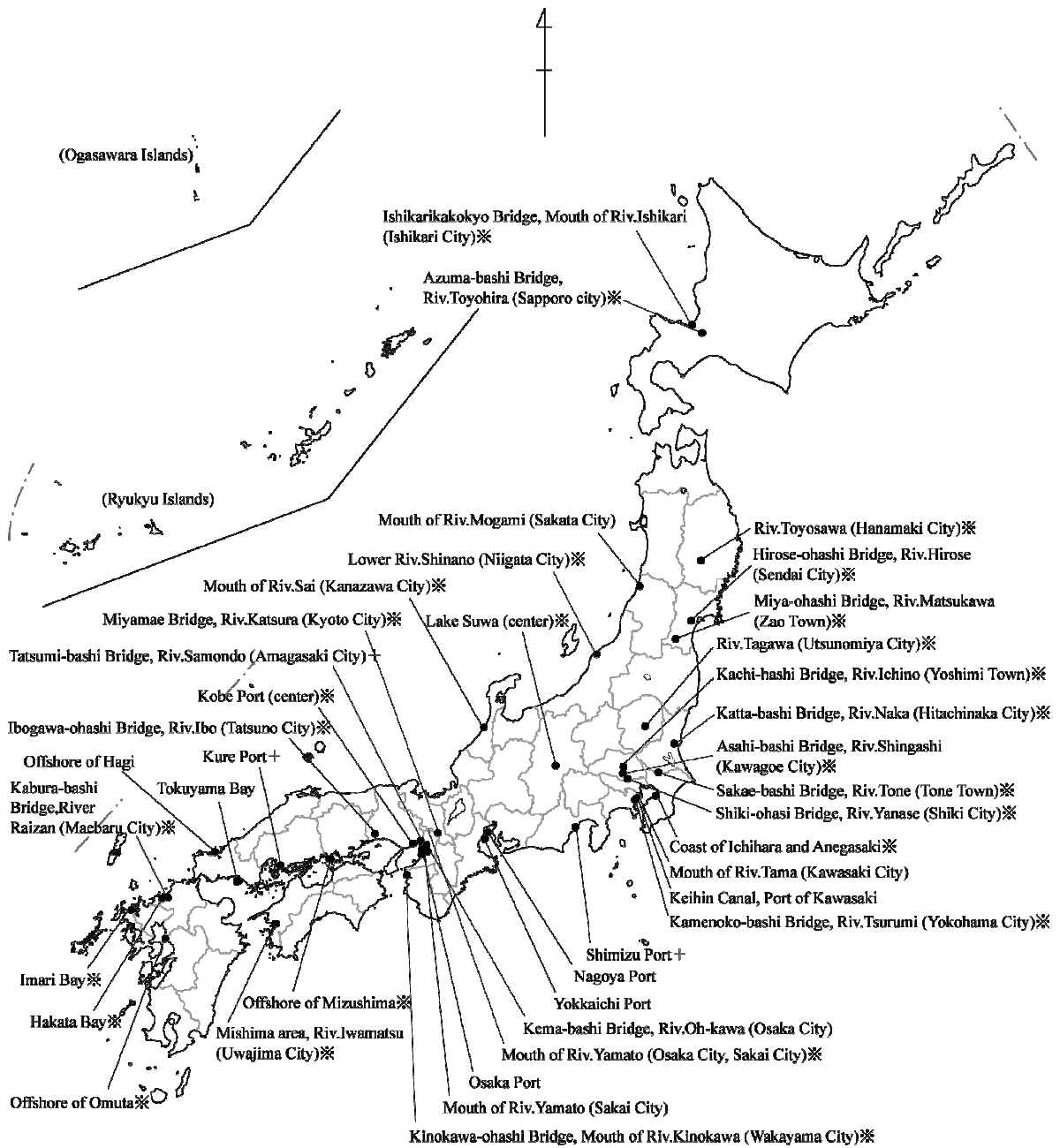


Figure 2-1-1 Surveyed sites (surface water and sediment) in the Detailed Environmental Survey in FY 2006

(Note) ※ means “surface water only.” † means “sediment only.”

Table 2-1-3 List of surveyed areas (wildlife) and target chemicals in the Detailed Environmental Survey in FY 2006

Local communities	Surveyed areas	Wildlife species	Target chemicals														
			[4]	[6]	[12]	[14]	[15]	[18]	[24]	[26]	[27]	[30]	[31]				
Hokkaido	Offshore of Japan Sea (offshore of Iwanai)	Greenling (<i>Hexagrammos lagocephalus</i>)															
Iwate Pref.	Yamada Bay	Blue mussel (<i>Mytilus galloprovincialis</i>)															
Miyagi Pref.	Sendai Bay (Matsushima Bay)	Sea bass (<i>Lateolabrax japonicus</i>)															
Tokyo Met.	Tokyo Bay	Sea bass (<i>Lateolabrax japonicus</i>)															
Yokohama City	Riv. Tsurumi	Carp (<i>Cyprinus carpio</i>)															
Kawasaki City	Offshore of Ogishima Island, Port of Kawasaki	Sea bass (<i>Lateolabrax japonicus</i>)															
Niigata Pref.	Lower Riv. Shinano (Niigata City)	Carp (<i>Cyprinus carpio</i>) and Barbel steed (<i>Hemibarbus barbus</i>)															
Shiga Pref.	Lake Biwa, Riv. Azumi (Takashima City)	Dace (<i>Tribolodon hakonensis</i>)															
Osaka Pref.	Osaka Bay	Sea bass (<i>Lateolabrax japonicus</i>)															
Shimane Pref.	Shichirui Bay, Shimane Peninsula	Blue mussel (<i>Mytilus galloprovincialis</i>)															
Hiroshima City	Hiroshima Bay	Sea bass (<i>Lateolabrax japonicus</i>)															
Yamaguchi Pref.	Tokuyama Bay	Striped mullet (<i>Mugil cephalus</i>)															
	Offshore of Hagi	Striped mullet (<i>Mugil cephalus</i>)															
Tokushima Pref.	Naruto	Hard-shelled mussel (<i>Mytilus coruscus</i>)															
Kagoshima Pref.	West Coast of Satsuma Peninsula	Sea bass (<i>Lateolabrax japonicus</i>)															

[4] Aldicarb, [6] *N,N'*-Ethylenebis(dithiocarbamic acid) and its salt, [12] 3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU), [14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol, [15] *N,N*-Dimethyldithiocarbamic acid and its salt, [18] Hydrogenated terphenyl, [24] Trichloronitromethane (synonym: Chloropicrin), [26] 1,1-Bis(*tert*-butyldioxy)-3,3,5-trimethylcyclohexane, [27] Hydrazine, [30] 2-(2-Benzothiazolyloxy)-*N*-methylacetanilide (synonym: Mefenacet), [31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol

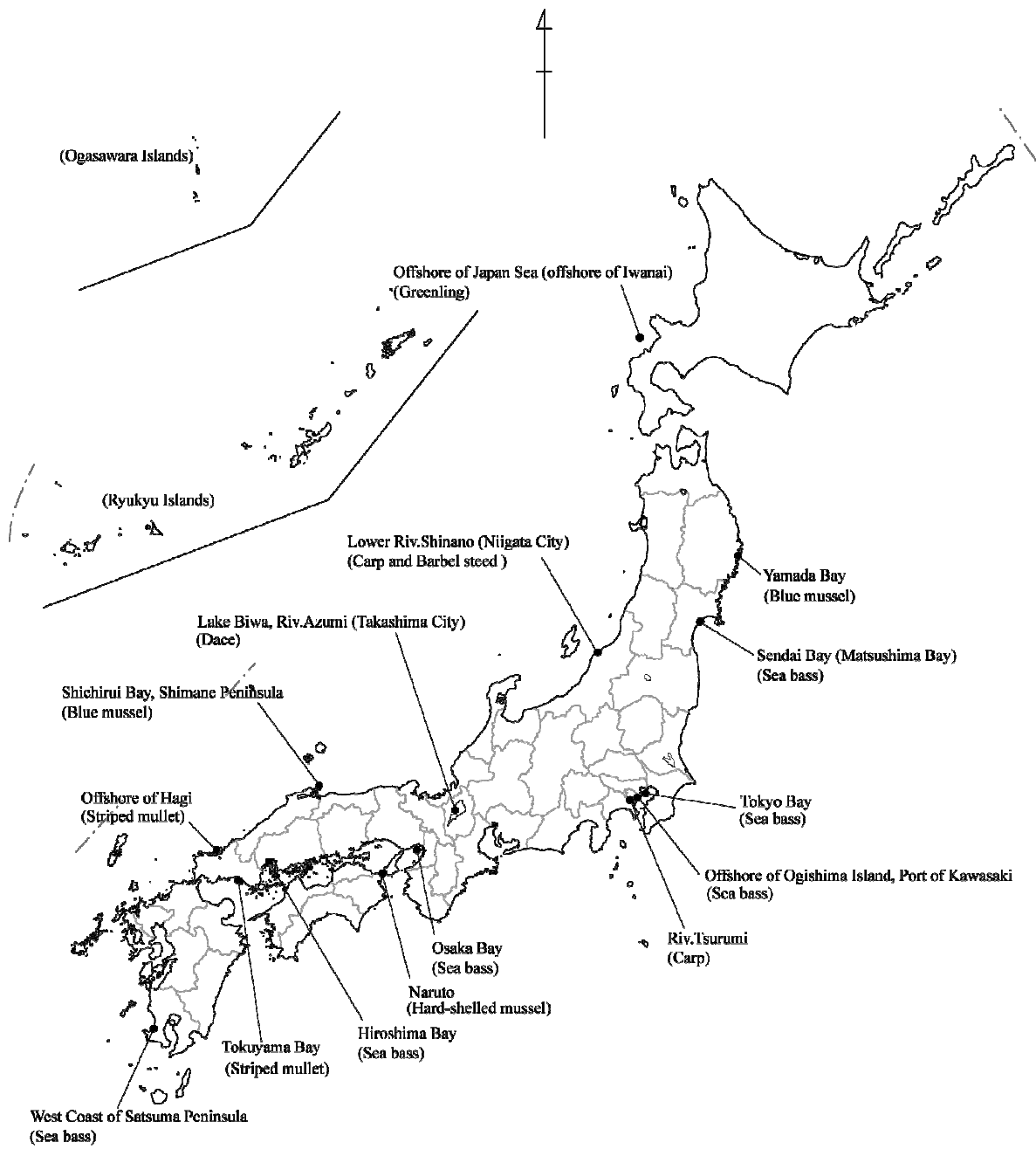


Figure 2-1-2 Surveyed areas (wildlife) in the Detailed Environmental Survey in FY 2006

Table 2-1-4 List of surveyed sites (air) and target chemicals in the Detailed Environmental Survey in FY 2006

Local communities	Surveyed sites	Target chemicals						
		[9]	[13]	[22]	[25]	[28]	[29]	[33]
Sapporo City	Sapporo City Institute of Public Health (Sapporo City)							
Saitama Pref.	Center for Environmental Science in Saitama (Kisai Town)							
Chiba Pref.	Ichihara-Matsuzaki Air Quality Monitoring Station (Ichihara City)							
Tokyo Met.	Tokyo Metropolitan Research Institute for Environmental Protection (Koto Ward)							
	Chichijima Island							
Kanagawa Pref.	Kanagawa Environmental Research Center (Hiratsuka City)							
Gifu Pref.	Gifu Prefectural Research Institute for Health and Environmental Sciences (Kakamigahara City)							
Mie Pref.	Mie Prefectural Science and Technology Promotion Center (Yokkaichi City)							
Kyoto Pref.	Kyoto Prefectural Joyo High School (Joyo City)							
Kyoto City	Kyoto City Hall (Kyoto City)							
Osaka Pref.	Osaka Prefecture Environmental Pollution Control Center (Osaka City)							
Hyogo Pref.	Hyogo Prefectural Institute of Public Health and Environmental Sciences (Kobe City)							
Wakayama Pref.	Wakayama Prefectural Research Center of Environment and Public Health (Wakayama City)							
Yamaguchi Pref.	Yamaguchi Prefectural Institute of Public Health and Environment (Yamaguchi City)							
Kagawa Pref.	Takamatsu Joint Prefectural Government Building (Takamatsu City)							

[9] Isobutyl acetate, [13] 2,6-Dichlorobenzonitrile (synonym: Dichlobenil), [22] Tetrahydrofuran, [25] Nitrofen (synonym: NIP), [28] 1-Butanol, [29] Furfural, [33] 2-(1-Methylethoxy)ethanol

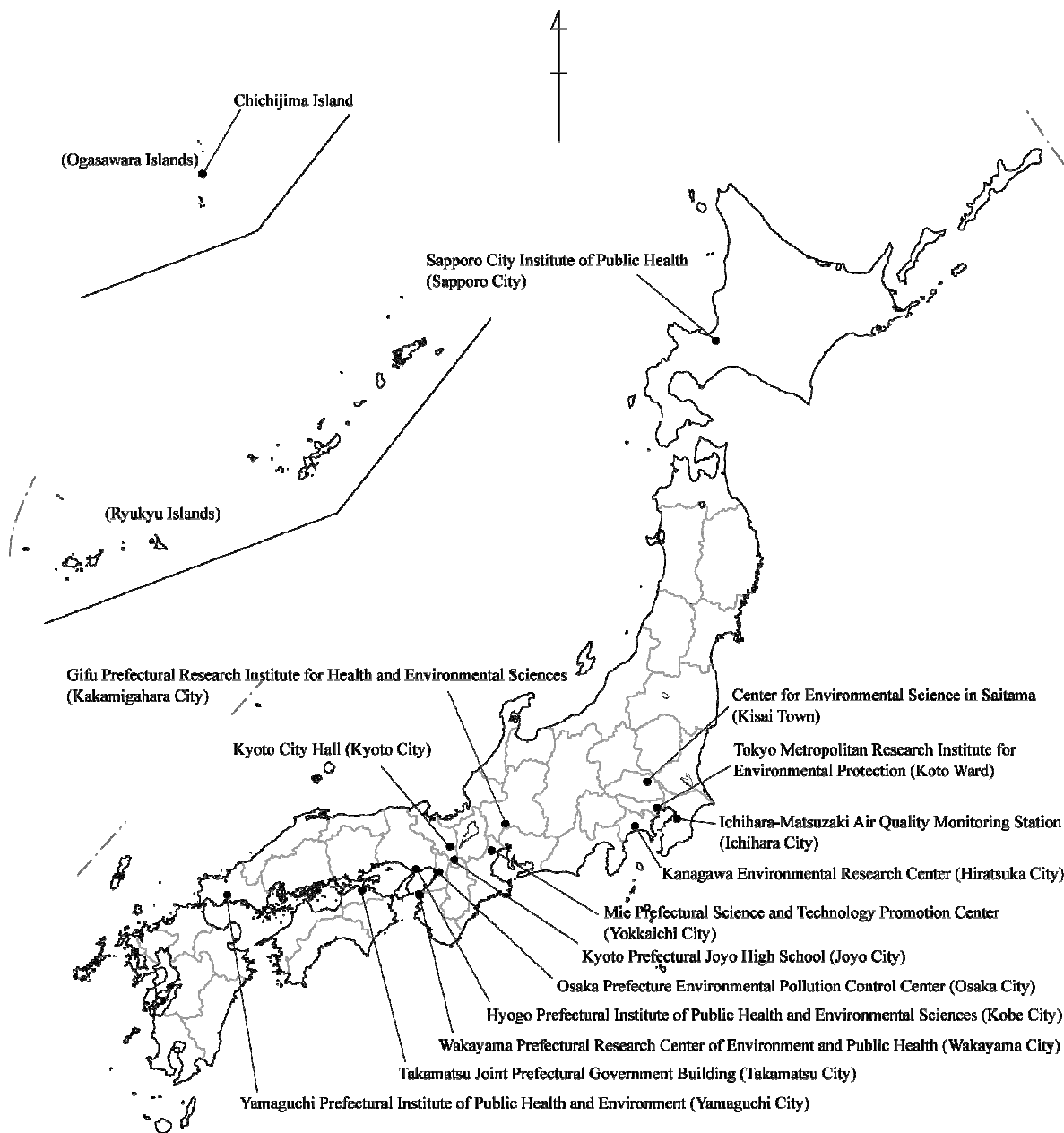


Figure 2-1-3 Surveyed sites (air) in the Detailed Environmental Survey in FY 2006

Table 2-1-5 List of surveyed regions (food) and target chemicals in the Detailed Environmental Survey in FY 2006

Survey by market basket method

Food			Surveyed regions	Daily intake weight (g)	Target Chemicals	
Groups	Sub-groups	Items			[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 <i>N</i> -methylcarbamate (synonym: Carbofuran)
Group 1	Rice grains	Well-milled rice (1)	Kanto	163.1	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	159.3		
		Well-milled rice (2)	Kanto	163.1		
			Kinki	159.3		
	Processed rice	Rice cake	Kanto	5.2		
Kinki	5.1					
Group 2	Wheat flours	Soft or hard wheat flours	Kanto	8.1	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	8.5		
	Breads (except sweet buns)	White table bread	Kanto	17.2		
			Kinki	18.7		
		French bread	Kanto	17.2		
			Kinki	18.7		
	Sweet buns	Bun filled with sweat bean paste	Kanto	6.6		
			Kinki	7.2		
	<i>Udon</i> , Chinese noodles	Raw <i>udon</i>	Kanto	12.3		
			Kinki	13.3		
		Raw Chinese noodles	Kanto	12.2		
			Kinki	13.3		
		Dried <i>somen</i>	Kanto	12.2		
			Kinki	13.3		
	Instant Chinese noodles	Instant noodle (deep-fried)	Kanto	4.2		
			Kinki	4.6		
	Pastas	Macaroni and Spaghetti	Kanto	10.1		
			Kinki	11.0		
	Other wheat processed foods	Chio tzu pastry	Kanto	5.2		
			Kinki	4.4		
	Buckwheat noodles and processed foods	Raw buckwheat noodles	Kanto	7.1		
			Kinki	7.7		
	Corns and processed foods	Corn flakes	Kanto	0.5		
			Kinki	0.6		
	Other grains		Kanto	1.2		
			Kinki	2.4		
	Seeds	Sesame seeds	Kanto	1.2		
			Kinki	1.1		
		Oil-roasted and salted peanuts	Kanto	1.2		
			Kinki	1.1		
	Sweet potatoes and processed foods	Sweet potatoes	Kanto	7.4		
			Kinki	6.7		
Potatoes and processed foods	Potatoes	Kanto	27.7			
		Kinki	26.3			
Other potatoes and processed foods	Satoimo (Taro)	Kanto	7.5			
		Kinki	6.6			
	Japanese yam or Chinese yam	Kanto	7.6			
		Kinki	6.7			
	Stringy <i>konnyaku</i> (Taro-starch vermicelli)	Kanto	6.3			
		Kinki	6.9			
Starches and processed foods	bean-starch vermicelli	Kanto	1.6			
		Kinki	1.5			

Food					Target Chemicals	
Groups	Sub-groups	Items	Surveyed regions	Daily intake weight (g)	[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 <i>N</i> -methylcarbamate (synonym: Carbofuran)
Group 3	Sugars and sweeteners	Caster sugar	Kanto	6.8	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	7.6		
	Japanese-style confectioneries	Sweet azuki-bean jelly	Kanto	5.6		
			Kinki	5.5		
			Kanto	5.5		
			Kinki	5.4		
	Cakes and pastries	Shortcakes	Kanto	3.9		
			Kinki	3.8		
		Custard cream puffs	Kanto	3.8		
			Kinki	3.7		
	Biscuits	Hard or soft biscuits	Kanto	1.9		
			Kinki	1.8		
	Candies	Fruit juice tasted tablets	Kanto	0.3		
			Kinki	0.3		
Other confections	Milk chocolates	Kanto	2.8			
		Kinki	2.7			
	Crisps	Kanto	2.7			
		Kinki	2.7			
Group 4	Butter	Salted butter	Kanto	1.2	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	1.1		
	Margarine	Soft type margarine	Kanto	1.3		
			Kinki	1.2		
	Vegetable oil	Blended oil	Kanto	3.0		
			Kinki	2.8		
		Olive oil	Kanto	3.0		
			Kinki	2.8		
	Sesame oil	Kanto	3.0			
		Kinki	2.7			
Animal oil and fat	Lard	Kanto	0.1			
		Kinki	0.1			
Group 5	Soybeans (whole grain) and processed foods	Boiled soybeans	Kanto	2.1	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	2.0		
	Bean curds	Hard or soft bean curds	Kanto	35.9		
			Kinki	34.2		
	Deep-fried bean curds	Deep-fried bean curds	Kanto	4.3		
			Kinki	3.9		
			Kanto	3.6		
		<i>Ganmodoki</i> (Deep-fried fritters of mashed bean curd and vegetables)	Kinki	4.6		
			Kanto	6.4		
	<i>Natto</i> (Steamed and fermented soybeans)	Sticky <i>Natto</i>	Kinki	6.1		
Kanto			6.9			
Other soy products	Soy milk	Kinki	6.6			
		Kanto	1.7			
Other beans and processed foods	Boiled red kidney beans	Kinki	1.6			
		Kanto	1.6			

Food					Target Chemicals	
Groups	Sub-groups	Items	Surveyed regions	Daily intake weight (g)	[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 N-methylcarbamate (synonym: Carbofuran)
Group 6	Strawberries	Strawberries	Kanto	0.2	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	0.2		
	Citrus fruits	Oranges	Kanto	16.7		
			Kinki	14.7		
		Grapefruits	Kanto	16.6		
			Kinki	14.6		
	Bananas	Bananas	Kanto	15.2		
			Kinki	13.4		
	Apples	Apples	Kanto	25.7		
			Kinki	22.6		
	Other fresh fruits	Watermelons	Kanto	13.0		
			Kinki	11.4		
		Melons	Kanto	13.0		
			Kinki	11.4		
	Pineapples	Kanto	12.9			
		Kinki	11.3			
Jam	Strawberry jam	Kanto	1.2			
		Kinki	1.1			
Fruit juice drink	Orange juice	Kanto	8.0			
		Kinki	7.0			
	Apple juice	Kanto	8.0			
		Kinki	7.0			
Group 7	Tomatoes	Tomatoes	Kanto	14.2	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	12.9		
	Carrots	Carrots	Kanto	17.9		
			Kinki	19.3		
	Spinach	Spinach	Kanto	13.5		
			Kinki	13.7		
	Sweet peppers	Green bell peppers	Kanto	3.3		
			Kinki	2.9		
	Other green and yellow vegetables	Broccoli	Kanto	15.3		
			Kinki	12.8		
		Asparagus	Kanto	11.9		
			Kinki	10.6		
		Pumpkins	Kanto	11.9		
			Kinki	12.7		
Vegetable juice	(Carton vegetable juice was used.)	Kanto	9.3			
		Kinki	7.4			

Food		Surveyed regions	Daily intake weight (g)	Target Chemicals		
Groups	Sub-groups			Items	[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 <i>N</i> -methylcarbamate (synonym: Carbofuran)
Group 8	Cabbage	Cabbage	Kanto	20.0	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	18.6		
	Cucumbers	Cucumbers	Kanto	9.6		
			Kinki	8.9		
	<i>Daikon</i>	<i>Daikon</i>	Kanto	27.2		
			Kinki	30.4		
	Onions	Onions	Kanto	25.9		
			Kinki	26.6		
	Chinese cabbage	Chinese cabbage	Kanto	11.7		
			Kinki	10.0		
	Other light coloured vegetables	Bamboo-shoots (boiled)	Kanto	8.3		
			Kinki	7.7		
		Bean sprouts	Kanto	7.3		
			Kinki	6.8		
		Eggplants	Kanto	5.6		
			Kinki	5.8		
		Burdocks	Kanto	7.3		
			Kinki	7.6		
	Lettuce	Kanto	8.2			
		Kinki	7.6			
	Pickled vegetable leaves	Seasoned <i>Nozawana</i> pickles	Kanto	3.2		
			Kinki	2.5		
		Salted <i>Chinese</i> cabbage pickles	Kanto	3.1		
			Kinki	2.5		
	<i>Takuan</i> and other pickles	<i>Takuan</i> pickles	Kanto	6.1		
			Kinki	4.8		
		<i>Fukujin</i> pickles	Kanto	6.0		
			Kinki	4.8		
	Mushrooms	Raw <i>Shiitake</i> mushroom	Kanto	2.8		
			Kinki	3.3		
		<i>Enokitake</i> mushroom	Kanto	4.6		
			Kinki	4.5		
<i>Hatakeslimeji</i> , <i>Bunashimeji</i> , and <i>Honshimeji</i> mushroom		Kanto	4.8			
		Kinki	4.3			
Seaweeds	Laver	Kanto	3.0			
		Kinki	3.1			
	<i>Konbu</i> (dried)	Kanto	11.4			
		Kinki	11.5			
	<i>Wakame</i> (dried)	Kanto	25.3			
		Kinki	25.5			
	Dried <i>Hijiki</i>	Kanto	3.6			
		Kinki	5.9			

Food			Surveyed regions	Daily intake weight (g)	Target Chemicals	
Groups	Sub-groups	Items			[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 <i>N</i> -methylcarbamate (synonym: Carbofuran)
Group 9	Japanese Sake	Refined sake	Kanto	11.2	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	12.8		
	Beer		Kanto	60.5		
			Kinki	69.1		
	Western liquor	White wine or red wine	Kanto	25.9		
			Kinki	29.6		
	Tea	Green tea (infusion)	Kanto	151.9		
			Kinki	173.5		
		Black tea (infusion)	Kanto	151.9		
			Kinki	173.4		
	Coffee or Cocoa	Coffee	Kanto	121.7		
			Kinki	139.0		
	Other beverages	Coke	Kanto	43.5		
			Kinki	49.7		
		Kanto	43.5			
		Kinki	49.7			

Food					Target Chemicals		
Groups	Sub-groups	Items	Surveyed regions	Daily intake weight (g)	[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 <i>N</i> -methylcarbamate (synonym: Carbofuran)	
Group 10	Japanese horse mackerels and sardines	Japanese horse mackerels	Kanto	2.8	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region	
			Kinki	3.2			
		Japanese pilchard	Kanto	2.8			
			Kinki	3.1			
			Kanto	2.4			
			Kinki	3.0			
		Pacific Saury	Kanto	2.5			
			Kinki	2.9			
		Salmons and trouts		Kanto			3.5
				Kinki			3.9
	Sea breams and flounders		Kanto	3.4			
			Kinki	3.3			
		Pacific Cod (fillet)	Kanto	3.2			
			Kinki	2.7			
	Tunas and marlins	Bigeye tuna	Kanto	6.0			
			Kinki	6.8			
	Other raw fishes	Yellowtail	Kanto	4.7			
			Kinki	5.2			
		Eel (broiled)	Kanto	4.8			
			Kinki	5.4			
	Bivalves	Short-necked clams	Kanto	2.0			
			Kinki	2.2			
		Japanese scallop	Kanto	1.9			
			Kinki	2.2			
	cuttlefishes and octopuses	Japanese common squid	Kanto	2.8			
			Kinki	3.2			
		Common octopus (boiled)	Kanto	2.8			
			Kinki	3.1			
	Shrimps and crabs		Kanto	5.4			
			Kinki	6.7			
	Seafood (salted, half dried, and dried)	Salted salmon	Kanto	5.1			
			Kinki	5.4			
		Salted cod roe	Kanto	4.8			
			Kinki	5.7			
		Japanese horse mackerels (dried fillet)	Kanto	4.9			
			Kinki	5.5			
	Seafood (canned food)	Canned boiled mackerel	Kanto	1.1			
			Kinki	1.3			
		Canned seasoned tuna	Kanto	1.1			
			Kinki	1.2			
Seafood (<i>Tsukudani</i>)	Japanese sand lance (<i>Tsukudani</i>)	Kanto	0.4				
		Kinki	0.4				
Seafood (kneaded)	Steamed <i>Kamaboko</i>	Kanto	2.3				
		Kinki	2.6				
	Baked <i>Chikuwa</i>	Kanto	2.3				
		Kinki	2.6				
	<i>Hampen</i>	Kanto	2.0				
		Kinki	2.4				
	<i>Satsumaage</i>	Kanto	2.2				
		Kinki	2.5				
Fish hams and sausages	Fish sausages	Kanto	0.4				
		Kinki	0.4				
					one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region	

Food		Surveyed regions	Daily intake weight (g)	Target Chemicals		
Groups	Sub-groups			Items	[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 N-methylcarbamate (synonym: Carbofuran)
Group 11	Beef	Brisket	Kanto	6.3	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	6.4		
		Ground beef	Kanto	7.0		
			Kinki	6.2		
	Pork	Pork thigh	Kanto	13.7		
			Kinki	11.7		
		Pork loin	Kanto	14.1		
			Kinki	13.7		
	Hams and sausages	Roast ham	Kanto	4.2		
			Kinki	3.9		
		Bacon	Kanto	3.7		
			Kinki	3.2		
	Vienna sausage	Kanto	3.9			
		Kinki	3.4			
	Other animal meats	Lamb shoulder	Kanto	0.3		
			Kinki	0.3		
Chicken	Chicken thigh	Kanto	17.9			
		Kinki	16.6			
Other poultries	Canard	Kanto	0.1			
		Kinki	0.1			
Meets (guts)	Beef liver or pork liver	Kanto	1.2			
		Kinki	1.0			
Eggs	Hen's eggs	Kanto	31.4			
		Kinki	38.3			
Group 12	Milk	Ordinary liquid milk	Kanto	110.4	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	98.1		
	Cheese	Processed cheese	Kanto	2.5		
			Kinki	2.2		
	Fermented milk and lactic acid bacteria beverage	Plain yogurt or sweetened yogurt	Kanto	12.6		
			Kinki	11.1		
		Lactic acid bacteria beverage and dairy products	Kanto	12.5		
	Other dairy products	Whipping cream	Kanto	4.5		
			Kinki	4.0		
		Ice cream	Kanto	4.4		
Kinki			3.9			

Food		Surveyed regions	Daily intake weight (g)	Target Chemicals		
Groups	Sub-groups			Items	[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furany 1 <i>N</i> -methylcarbamate (synonym: Carbofuran)
Group 13	Sauce	Worcester sauce	Kanto	2.1	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	2.4		
	Soy sauce	<i>Koikuchi</i>	Kanto	16.3		
			Kinki	18.7		
	Salt	Common salt	Kanto	1.5		
			Kinki	1.7		
	Mayonnaise	Mayonnaise	Kanto	3.3		
			Kinki	3.7		
	<i>Miso</i>	Light yellow type	Kanto	11.4		
			Kinki	13.2		
	Other seasonings	Grain vinegar or rice vinegar	Kanto	6.3		
			Kinki	7.2		
		Dressing	Kanto	6.2		
			Kinki	7.2		
		Tomato ketchup	Kanto	6.2		
			Kinki	7.2		
		<i>Mentsuyu</i>	Kanto	6.2		
			Kinki	7.2		
			Kanto	6.2		
			Kinki	7.2		
		Kanto	6.2			
		Kinki	7.1			
Consommé cubes	Kanto	6.2				
	Kinki	7.1				
Curry roux	Kanto	10.9				
	Kinki	11.5				
Hash roux	Kanto	10.9				
	Kinki	11.0				
spices and others	Mustard paste	Kanto	0.1			
		Kinki	0.1			
	<i>Wasabi</i> paste	Kanto	0.1			
		Kinki	0.1			
Group 14	Drinking water	Tap water	Kanto	250	one specimen from one mixed sample per survey region	one specimen from one mixed sample per survey region
			Kinki	250		

Survey of nationwide food by *Kagezen* method

Surveyed areas	Surveyed sites	Numbers of samples	Target chemicals	
			[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furan-7-yl <i>N</i> -methylcarbamate (synonym: Carbofuran)
Hokkaido	Ishikari City	1		
	Sapporo City	1		
	Eniwa City	1		
	Sapporo City	1		
	Otaru City	1		
Miyagi Pref.	Sendai City	1		
	Sendai City	1		
	Sendai City	1		
	Sendai City	1		
	Tagajo City	1		
Tokyo Met.	Hachioji City	1		
	Tama City	1		
	Nerima Ward	1		
	Suginami Ward	1		
	Tama City	1		
Ishikawa Pref.	Hakusan City	1		
	Kanazawa City	1		
	Kanazawa City	1		
	Kanazawa City	1		
	Kahoku City	1		
Nagano Pref.	Ueda City	1		
	Matsumoto City	1		
	Shimoina District	1		
	Saku City	1		
	Nagano City	1		
Aichi Pref.	Nishio City	1		
	Nagoya City	1		
	Kasugai City	1		
	Nagoya City	1		
	Nagoya City	1		
Osaka Pref.	Minoh City	1		
	Izumisano City	1		
	Takaishi City	1		
	Settsu City	1		
	Katano City	1		
Ehime Pref.	Matsuyama City	1		
	Matsuyama City	1		
	Matsuyama City	1		
	Matsuyama City	1		
	Matsuyama City	1		
Fukuoka Pref.	Fukuoka City	1		
	Fukuoka City	1		
	Fukuoka City	1		
	Fukuoka City	1		
	Kitakyushu City	1		
Okinawa Pref.	Urasoe City	1		
	Nakagami District	1		
	Itoman City	1		
	Naha City	1		
	Okinawa City	1		

Survey of individual instant foods

Types	Contents	Numbers of samples	Target Chemicals	
			[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furanyl <i>N</i> -methylcarbamate (synonym: Carbofuran)
Frozen food	Frozen pilaf	1		
	Frozen <i>udon</i> (wheat noodle)	1		
	Frozen cutlet	1		
	Frozen <i>Shao mai</i>	1		
	Frozen hamburger	1		
	Frozen <i>Chio tzu</i>	1		
	Frozen croquettes	1		
	Frozen fried rice	1		
	Frozen spring rolls	1		
	Frozen gratin	1		
Retort-pouched food	Retort-pouched curry	1		
	Retort-pouched sauces	1		
	Retort-pouched baby food	1		
	Retort-pouched Western soup	1		
	Retort-pouched Chinese soup	1		
	Retort-pouched rice	1		
	Retort-pouched porridge	1		
	Retort-pouched <i>Zenzai</i>	1		
	Retort-pouched beef bowls	1		
	Retort-pouched risotto	1		
Instant food	Cup noodles	1		
	Instant cup <i>udon</i> (wheat noodle)	1		
	Instant cup fried noodles	1		
	Instant <i>ramen</i> (packed)	1		
	Instant soup	1		
	Freeze-dried baby food	1		
	Instant pasta	1		
	Powdered milk	1		
	Instant bean paste soup	1		
	Instant starch noodle	1		
Canned food	Canned seafood (tuna)	1		
	Canned seafood (mackerel)	1		
	Canned fruit	1		
	Canned meat	1		
	Canned cooked food	1		
	Canned vegetables	1		
Bottled food	Bottled baby food	1		
	Bottled sea food	1		
	Bottled vegetables	1		
	<i>Tsukudani</i>	1		
Prepared food	Preparedfood-1	1		
	Preparedfood-2	1		
	Preparedfood-3	1		
	Preparedfood-4	1		
	Preparedfood-5	1		
	Preparedfood-6	1		
	Preparedfood-7	1		
	Preparedfood-8	1		
	Preparedfood-9	1		
	Preparedfood-10	1		

Survey of individual restaurant food

Types	Contents	Numbers of samples	Target Chemicals	
			[27] Hydrazine	[34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furanyl <i>N</i> -methylcarbamate (synonym: Carbofuran)
Fast food	Hamburger set, etc.	5		
Japanese rice bowl dishes	Rice bowl dishes, etc.	5		
Family restaurant	Set menus	6		
Steak, grilled meat	Set menus	4		
<i>Sushi</i>	<i>Sushi</i>	5		
<i>Ramen, soba, udon</i> , pasta	Noodles	6		
Chinese food	Set menus	4		
Other restaurants	Set menus	5		
Box lunch shop	Box lunch	7		
Bakery	Bread	3		

(3) Detection limit

The detection limits of analysed values reported by the analytical laboratory are not necessarily the same because of differences in the properties of specimens and in the available measurement equipments. To enable summarisation, therefore, a unified detection limit is predetermined and the analytical values reported by the analytical laboratory are summarised by the following procedure.

Treatment of measured value as an undetected value in high-sensitivity analysis

In the case of high-sensitivity analysis, in which the detection limit of the analytical laboratory is lower than the unified detection limit, any measured value lower than the unified detection limit is treated as an undetected value in the nationwide summary (see schematic).

Elimination of undetected values in low-sensitivity analysis from summary subject

When the detection limit of the analytical laboratory is higher than the unified detection limit, any target chemical not detected is eliminated from the subject of the summary (see schematic).

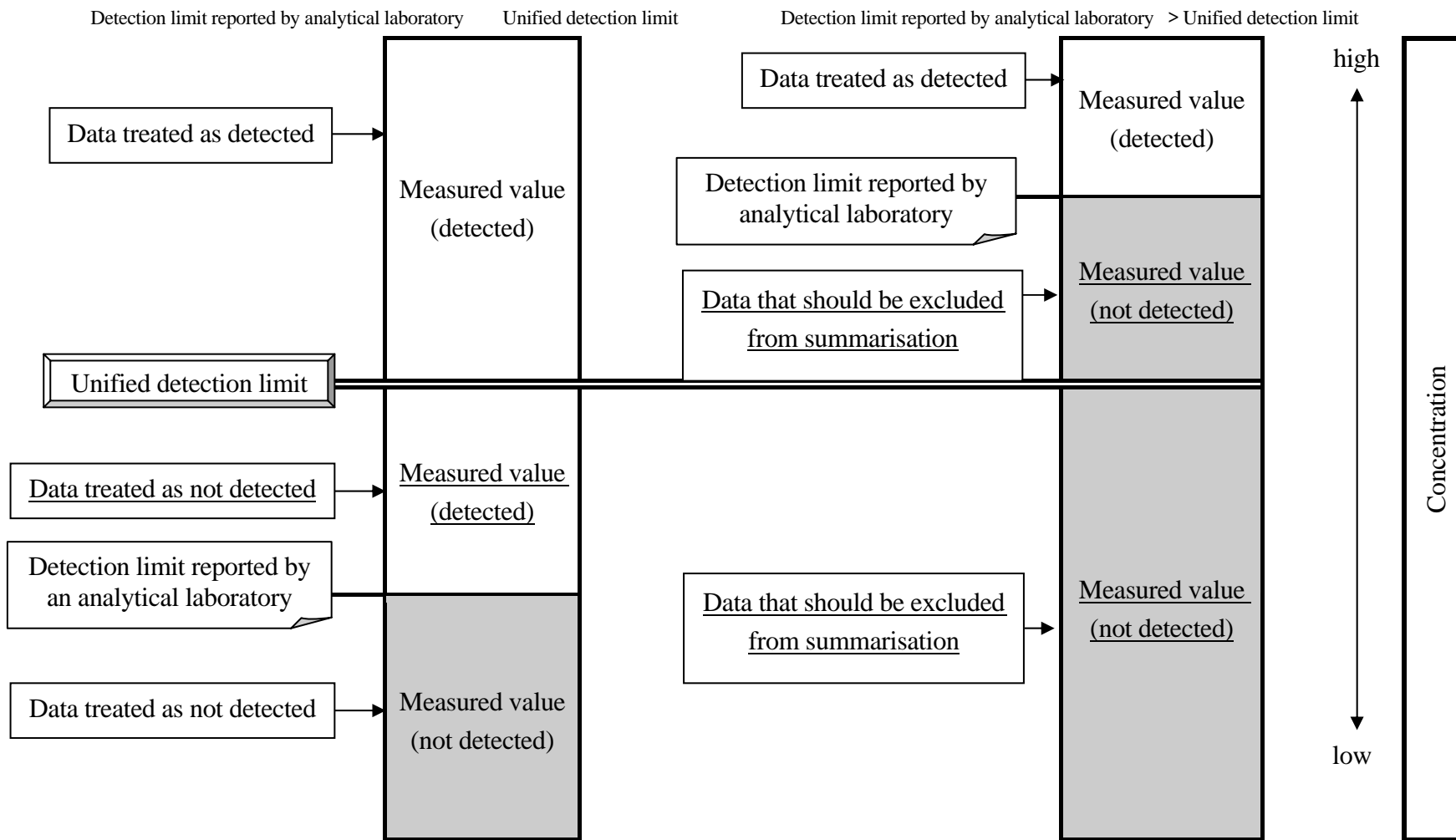
When the instrument detection limit (IDL) and the method detection limit (MDL) are given in the analytical method, which is described in reports on the investigation of the development of analytical methods for chemicals and adopted in the Initial Environmental Survey (hereafter, the Initial Environmental Survey Analytical Method), if the IDL measured by the analytical laboratory is lower than the given IDL, the MDL of the Initial Environmental Survey Analytical Method is used as the detection limit by the analytical laboratory.

When IDL and MDL are not given in the Initial Environmental Survey Analytical Method, the detection limit is predetermined by the following procedure.

When the analytical laboratory calculates the appropriate IDL and MDL following the calculation method stated in the analytical method development instruction manuals, this calculated MDL is used as the detection limit by the analytical laboratory.

When the appropriate IDL and MDL are not calculated by the analytical laboratory, one of the following procedures was employed to establish the detection limit by the analytical laboratory.

- deduction from the IDL and MDL calculated for the corresponding chemical by Initial Environmental Survey Analytical Method or other analytical laboratories
- deduction from the lowest calibration curve concentration and the results of recovery tests
- deduction from the results of addition and collection tests, the results of operation blank tests, and the signal/noise ratio (S/N ratio) obtained from the chromatogram of environmental specimens



Schematic of procedure for data summarisation

4. Summary of survey results

The detection ranges and the detection limits are shown in Table 2-2. The survey results are summarized as follows.

In surface water, 11 out of 22 target chemicals (groups) were detected.

- [5] *O*-Ethyl *O*-4-nitrophenyl phenylphosphonothioate (synonym: EPN): 3 of 8 valid sites
- [7] 2,6-Xylenol: 2 of 6 valid sites
- [12] 3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU): 9 of 10 valid sites
- [14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol: 4 of 6 valid sites
- [19] *O,O*-Diethyl *O*-2-isopropyl-6-methyl-4-pyrimidinyl phosphorothioate (synonym: Diazinon): 7 of 10 valid sites
- [20] *O,O*-Dimethyl *O*-3-methyl-4-nitrophenyl phosphorothioate (synonym: Fenitrothion or MEP): 6 of 6 valid sites
- [31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol: 2 of 6 valid sites
- [32] Methyl methacrylate: 1 of 7 valid sites
- [35] 2-*sec*-Butylphenyl *N*-methylcarbamate; (synonym: Fenobucarb or BPMC): 10 of 10 valid sites
- [37] Dimethyl 2,2-dichlorovinyl phosphate (synonym: Dichlorvos or DDVP): 6 of 8 valid sites
- [38] Tributyl phosphate: 10 of 19 valid sites

In sediment, 3 out of 7 target chemicals (groups) were detected.

- [14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol: 6 of 6 valid sites
- [17] *N,N*-Dimethylformamide: 4 of 8 valid sites
- [31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol: 6 of 6 valid sites

In wildlife (bivalves or fish), 5 out of the 11 target chemicals (groups) were detected.

- [12] 3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU): 10 of valid sites
- [14] 2,4-Di-*tert*-butyl-6-(5-chloro-2*H*-1,2,3-benzotriazol-2-yl)phenol: 10 of 10 valid sites
- [18] Hydrogenated terphenyl: 2 of 10 valid sites
- [27] Hydrazine: 9 of 10 valid sites
- [31] 2-(2*H*-1,2,3-Benzotriazol-2-yl)-4,6-di-*tert*-butylphenol: 10 of 10 valid sites

In air, 6 out of the 7 target chemical were detected.

- [9] Isobutyl acetate: 4 of 7 valid sites
- [13] 2,6-Dichlorobenzonitrile (synonym: Dichlobenil): 7 of 7 valid sites
- [22] Tetrahydrofuran: 3 of 7 valid sites
- [28] 1-Butanol: 5 of 7 valid sites
- [29] Furfural: 5 of 7 valid sites
- [33] 2-(1-Methylethoxy)ethanol: 3 of 7 valid sites

In food, 2 out of the 2 target chemical was detected.

- [27] Hydrazine: 146 samples of 178 valid samples
- [34] 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furanyl *N*-methylcarbamate (synonym: Carbofuran): 14 samples of 178 valid samples

Table 2-2 Summary of the detection ranges and the detection limits in the Detailed Environmental Survey in FY 2006

Target chemicals		Surface water (ng/L)		Sediment (ng/g-dry)		Wildlife (ng/g-wet)		Air (ng/m ³)		Food (ng/g-wet) or (ng/L)	
No.	Name	Detection		Detection		Detection		Detection		Detection	
		range and frequency	limit	range and frequency	limit	range and frequency	limit	range and frequency	limit	range and frequency	limit
[1]	2,2'-Azobisisobutyronitrile	nd 0/6	40								
[2]	2-Amino-4-[hydroxy(methyl)phosphinoyl]butyric acid (synonym: Glufosinate)	nd 0/10	670								
[3]	<i>m</i> -Aminophenol	nd 0/7	7								
[4]	Aldicarb	nd 0/10	3	nd 0/6	0.17	nd 0/10	0.0016				
[5]	<i>O</i> -Ethyl <i>O</i> -4-nitrophenyl phenylphosphonothioate (synonym: EPN)	nd ~ 0.18 3/8	0.09								
[6]	<i>N,N</i> -Ethylenebis(dithiocarbamic acid) and its salt										
[6-1]	Manganese <i>N,N</i> -ethylenebis(dithiocarbamate) (synonym: Maneb)										
[6-2]	Complex compounds of manganese <i>N,N</i> -ethylenebis(dithiocarbamate) and zinc <i>N,N</i> -ethylenebis(dithiocarbamate) (synonym: Mancozeb)	nd 0/7	30			nd 0/10	0.13				
[6-3]	<i>N,N</i> -Ethylenebis(thiocarbamoylthiozinc) bis(<i>N,N</i> -dimethyldithiocarbamate) (synonym: Polycarbamate)										
[7]	2,6-Xylenol	nd ~ 3.4 2/6	0.5								
[8]	Chlorobenzene			nd 0/6	0.3						
[9]	Isobutyl acetate							nd ~ 570 4/7	95		
[10]	Diisopropyl naphthalene	nd 0/4	0.4								
[11]	<i>S</i> -4-Chlorobenzyl <i>N,N</i> -diethylthiocarbamate (synonym: Thiobencarb)	nd 0/13	6								
[12]	3-(3,4-Dichlorophenyl)-1,1-dimethylurea (synonym: Diuron or DCMU)	nd ~ 230 9/10	0.6			nd ~ 0.20 10/10	0.0019				
[13]	2,6-Dichlorobenzonitrile (synonym: Dichlobenil)							0.10 ~ 0.76 7/7	0.04		
[14]	2,4-Di- <i>tert</i> -butyl-6-(5-chloro-2 <i>H</i> -1,2,3-benzotriazol-2-yl)phenol	nd ~ 0.23 4/6	0.07	0.18 ~ 41 6/6	0.10	0.053 ~ 3.0 10/10	0.004				
[15]	<i>N,N</i> -Dimethyldithiocarbamic acid and its salt										
[15-1]	Zinc bis(<i>N,N</i> -dimethyldithiocarbamate) (synonym: Ziram)	nd 0/7	50			nd 0/10	0.3				
[15-2]	<i>N,N</i> -Ethylenebis(thiocarbamoylthiozinc) bis(<i>N,N</i> -dimethyldithiocarbamate) (synonym: Polycarbamate)										
[16]	<i>N,N</i> -Dimethyldodecylamine <i>N</i> -oxide			nd 0/4	0.8						
[17]	<i>N,N</i> -Dimethylformamide			nd ~ 18 4/8	1.4						

Target chemicals		Surface water (ng/L)		Sediment (ng/g-dry)		Wildlife (ng/g-wet)		Air (ng/m ³)		Food (ng/g-wet) or (ng/L)	
No.	Name	Detection		Detection		Detection		Detection		Detection	
		range and frequency	limit	range and frequency	limit	range and frequency	limit	range and frequency	limit	range and frequency	limit
[18]	Hydrogenated terphenyl					nd ~ 0.81 2/10	0.52				
[19]	<i>O,O</i> -Diethyl <i>O</i> -2-isopropyl-6-methyl-4- pyrimidinyl phosphorothioate (synonym: Diazinon)	nd ~ 19 7/10	1								
[20]	<i>O,O</i> -Dimethyl <i>O</i> -3-methyl-4-nitrophenyl phosphorothioate (synonym: Fenitrothion or MEP)	nd ~ 4.8 6/6	0.011								
[21]	Tetrachloroisophthalonitrile (synonym: Chlorothalonil or TPN)	nd 0/8	0.5								
[22]	Tetrahydrofuran							nd ~ 260 3/7	60		
[23]	Trichloroacetaldehyde	nd 0/7	10								
[24]	Trichloronitromethane (synonym: Chloropicrin)					nd 0/10	0.3				
[25]	Nitrofen (synonym: NIP)							nd 0/6	0.7		
[26]	1,1-Bis(<i>tert</i> -butyldioxy)-3,3 ,5-trimethylcyclohexane					nd 0/10	0.03				
[27]	Hydrazine					nd ~ 95 9/10	1.2			diet nd ~ 0.80 (drinking water 0.77 ~ 2.7) 146/178	diet 0.0066 ~ 0.0095 (drinking water 0.68)
[28]	1-Butanol							nd ~ 1,400 5/7	60		
[29]	Furfural							nd ~ 85 5/7	40		
[30]	2-(2-Benzothiazolyloxy)- <i>N</i> - methylacetanilide (synonym: Mefenacet)	nd 0/13	25			nd 0/10	0.3				
[31]	22-(2 <i>H</i> -1,2,3-Benzotriazol- 2-yl)-4,6-di- <i>tert</i> -butylpheno l	nd ~ 0.10 2/6	0.04	0.009 ~ 5.8 6/6	0.010	0.009 ~ 3.7 10/10	0.003				
[32]	Methyl methacrylate	nd ~ 15 1/7	8								
[33]	2-(1-Methylethoxy)ethanol							nd ~ 30 3/7	20		
[34]	2,3-Dihydro-2,2-dimethyl-7- benzo[b]furanyl <i>N</i> -methylcarbamate (synonym: Carbofuran)									diet nd ~ 0.12 (drinking water nd) 14/178	diet 0.0048 ~ 0.015 (drinking water 0.12)
[35]	2- <i>sec</i> -Butylphenyl <i>N</i> -methylcarbamate; (synonym: Fenobcarb or BPMC)	0.2 ~ 5.1 10/10	0.2								
[36]	α -Methylstyrene			nd 0/5	0.7						
[37]	Dimethyl 2,2-dichlorovinyl phosphate (synonym: Dichlorvos or DDVP)	nd ~ 20 6/8	0.3								

Target chemicals		Surface water (ng/L)		Sediment (ng/g-dry)		Wildlife (ng/g-wet)		Air (ng/m ³)		Food (ng/g-wet) or (ng/L)	
No.	Name	Detection		Detection		Detection		Detection		Detection	
		range and frequency	limit	range and frequency	limit	range and frequency	limit	range and frequency	limit	range and frequency	limit
[38]	Tributyl phosphate	nd ~ 84 10/19	10								

(Note 1) Detection frequency is based on the number of sites or areas, thus means (the number of detected sites/the number of surveyed sites). A site where data were not available was excluded from the number of surveyed sites. A site where the data became invalid under a unified detection limit was also excluded. In cases where a chemical is detected in one or more samples from a site or an area, the site or area can be defined as one "detected site" or one "detected area".

(Note 2) Detection range is based on the number of samples and therefore can be shown as "nd ~ " even if a target chemical is detected in all sites (or areas).

(Note 3) means the medium was not surveyed.

(Note 4) is the sum value of detection limits of each congener and isomer, and therefore a detection range that does not exceed this value can be shown instead of "nd".

(Note 5) Food is shown for diet (ng/g-wet) and drinking water (ng/L).