

IV 食事中の臭素系ダイオキシン等の蓄積状況等の調査結果について

(調査結果の概要)

平成 9 及び 10 年度に陰膳方式により採取した食事試料を活用して、計 48 試料について、試験的に臭素系ダイオキシンを測定するとともに、参考として、併せて塩素系のダイオキシン類（以下、「ダイオキシン類」という。）を測定した。

その結果、

臭素系ダイオキシンについては、分析した全てにおいて定量下限値未満であった。

また、ダイオキシン類については、1 日に摂取されたダイオキシン類の総量では、平成 9 年度については、平均値で 0.81pgTEQ/kg 体重、中央値で 0.42pgTEQ/kg 体重、範囲は 0.015 ～ 4.8pgTEQ/kg 体重であり、平成 10 年度については、平均値で 0.93pgTEQ/kg 体重、中央値で 0.78pgTEQ/kg 体重、範囲は 0.0070 ～ 3.6pgTEQ/kg 体重であった。また、平成 9 及び 10 年度の合計では、平均値で 0.88pgTEQ/kg 体重、中央値で 0.65pgTEQ/kg 体重、範囲は 0.0070 ～ 4.8pgTEQ/kg 体重であった。

1 経緯

ダイオキシン類については、最近の調査結果によると、人への平均的な暴露経路は 9 割以上が食事であると考えられている。一方、ダイオキシン類と類似の毒性を有するのではないかとされている臭素系ダイオキシンについては、人への暴露状況等はほとんどわかっていない状況にある。

そのため、自治体等の協力の下で平成 9 年度及び 10 年度に陰膳方式により採取された食事試料について、試験的に臭素系ダイオキシン等の測定を試みた。

なお、本調査の結果のとりまとめに当たっては、別紙 1 の専門家の方々にご意見等をいただいた。

2 調査内容

(1) 概要

平成 9 年度及び 10 年度に採取した食事試料、計 48 試料（平成 9 年度 22 試料、10 年度 26 試料）について、試験的に臭素系ダイオキシンを測定した。

また、ダイオキシン類の摂取状況についても本調査と併せて実施した。

(2) 試料

平成 9 年度及び 10 年度に、自治体等の協力の下で陰膳方式により採取した食事試料を使用した。

本試料は、朝食、昼食、夕食等について陰膳方式により、同一人が 1 日に経口的に摂取するもの全てを試料として採取した。また、本試料の採取に当たっては、1 世帯 3 日分の

食事試料を1検体として、ミキサー等により混合及び均質化した。

(3) 分析対象物質

① 臭素系ダイオキシン (PBDD 及び PBDF)

- ・ 4 臭素化物：2 種類
- ・ 5 臭素化物：3 種類
- ・ 6 臭素化物：3 種類

② ダイオキシン類 (表 1 参照)

- ・ PCDD 及び PCDF : 28 種類
- ・ コプラナー PCB : 12 種類

(7) 評価方法

ダイオキシン類については、分析項目全ての結果とともに、WHO-TEF (1998) による毒性等価係数 (TEF) により毒性等量 (TEQ) 換算したもので評価した。また、ダイオキシン類については、定量下限値 (下記) 未満 (ND) の数値について、本文中では ND を 0 とし、ND を定量下限値の 1/2 で換算した数値も参考として併記した。

なお、定量下限値は以下のとおりである。

① 臭素系ダイオキシン (PBDD 及び PBDF)

- ・ 4 臭素化物 : 0.1 pg/g
- ・ 5 臭素化物 : 0.5 pg/g
- ・ 6 臭素化物 : 5 pg/g

② ダイオキシン類

- ・ 4,5 塩素化物 : 0.01 pg/g
- ・ 6,7 塩素化物 : 0.02 pg/g
- ・ 8 塩素化物 : 0.05 pg/g
- ・ non-ortho PCBs : 0.1 pg/g
- ・ mono-ortho PCBs : 1 pg/g

3 調査結果

分析結果は、表 2 (臭素系ダイオキシン) 及び表 3 (ダイオキシン類) のとおり。
概要は以下のとおり。

(1) 臭素系ダイオキシン

分析した異性体の全てにおいて定量下限値未満であった。

(2) ダイオキシン類 (() 内は ND を定量下限値の 1/2 で換算した結果)

毒性当量 (TEQ) 換算した結果では、1 日に摂取されたダイオキシン類の総量は、平成 9 年度 (計 22 試料) については、平均値で 0.81(1.6)pgTEQ/kg 体重、中央値で 0.42(1.4)pgTEQ/kg 体重、範囲は 0.015 ~ 4.8(0.94 ~ 5.4)pgTEQ/kg 体重であった。

平成 10 年度 (計 26 試料) については、平均値で 0.93(1.7)pgTEQ/kg 体重、中央値で 0.78

(1.4)pgTEQ/kg 体重、範囲は 0.0070 ～ 3.6(0.88 ～ 4.0)pgTEQ/kg 体重であった。

平成 9 及び 10 年度の合計（計 48 試料）では、平均値で 0.88(1.7)pgTEQ/kg 体重、中央値で 0.65(1.4)pgTEQ/kg 体重、範囲は 0.0070 ～ 4.8(0.88 ～ 5.4)pgTEQ/kg 体重であった。

今回の調査では、平成 9 年度と 10 年度との間では有意な差は見られなかった。

また、全 48 試料のうち、1pgTEQ/kg 体重以下は 32 (9) 試料、1 ～ 2pgTEQ/kg 体重は 12 (29) 試料、2 ～ 3pgTEQ/kg 体重は 2 (8) 試料、3 ～ 4pgTEQ/kg 体重は 1 (1) 試料、4pgTEQ/kg 体重を超過したものは 1 (1) 試料であった。

4 とりまとめ及び評価

今回の調査は、平成 9 年度及び 10 年度に陰膳方式により採取した食事試料を用いて、臭素系ダイオキシン等の摂取状況についての実態把握を試みたものである。

この結果、臭素系ダイオキシンについては分析した異性体全てにおいて定量下限値未満であった。しかしながら、臭素系ダイオキシンの分析については、まだ試験的な段階であり、定量下限値の向上等分析法の改善等が必要であると考えられる。

今後は、分析法の改善等を進めつつ、食事中だけでなく、大気等の環境媒体中での濃度レベルについて把握していくことが必要である。

一方、本調査において併せて実施したダイオキシン類については、平成 9 年度は平均値で 0.81(1.6)pgTEQ/kg 体重、平成 10 年度は平均値で 0.93(1.7)pgTEQ/kg 体重、平成 9 及び 10 年度の合計は平均値で 0.88(1.7)pgTEQ/kg 体重という結果が得られた。今回の調査では、平成 9 年度と 10 年度との間では有意な差は見られなかった。

なお、今回の調査は、1 世帯 3 日分の食事試料を 1 検体とした期間内 1 回限りの断面的なものであり、生涯にわたって連日摂取し続けた場合の影響の指標である耐容一日摂取量（TDI：4pgTEQ/kg 体重/日）と単純に比較することはできないし、また、大気等からの吸入も考慮していないが、48 試料中 1 試料のみ 4pgTEQ/kg 体重を超過（定量下限値以下を 0 として計算した場合 4.8pgTEQ/kg 体重）した。今回のような断面的な調査は、ある程度長期継続的に調査しなければ個々人の食事からの摂取量の平均的なレベルは評価することは困難であると考えられることから、関係者の協力を得ることができるならば、必要に応じて、例えば、同一の世帯におけるより長期間にわたる継続的な調査の設計も望まれる。

5 今後の予定

臭素系ダイオキシンについては、来年度より、分析法の改善等を進めつつ、その毒性や暴露実態に関する知見を収集・整理（文献調査）するとともに、環境媒体中の濃度レベルの実態等についてパイロット調査を行うことを計画しているところである。

また、ダイオキシン類については、昨年度実施した「ダイオキシン類長期大気曝露影響調査」の結果も踏まえて、本年度は引き続き「ダイオキシン類精密暴露調査」を実施することとしており、その中で、期間内に昨年度の同一被験者等による 3 回の食事調査（陰膳方式）を計画しているところである。もちろん、3 ～ 4 回程度（継続して調査する被験者

の場合には前年度を含めて4回となる予定)の調査でも、耐容一日摂取量(TDI: 4pgTEQ/kg 体重/日)と単純には比較することはできないと考えるが、食事毎の個人的なバラツキの状況はある程度把握できるのではないかと考えているところである。

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	含有塩素数	異性体	毒性等価係数	
			I-TEF(1988) WHO/IPCS-TEF(1993)※	WHO-TEF1998
P C D D	4	1,3,6,8-T ₄ CDD	—	—
		1,3,7,9-T ₄ CDD	—	—
		2,3,7,8-T ₄ CDD	1	1
	5	1,2,3,7,8-P ₅ CDD	0.5	1
	6	1,2,3,4,7,8-H ₆ CDD	0.1	0.1
		1,2,3,6,7,8-H ₆ CDD	0.1	0.1
		1,2,3,7,8,9-H ₆ CDD	0.1	0.1
	7	1,2,3,4,6,7,8-H ₇ CDD	0.01	0.01
P C D F	4	1,2,7,8-T ₄ CDF	—	—
		2,3,7,8-T ₄ CDF	0.1	0.1
	5	1,2,3,7,8-P ₅ CDF	0.05	0.05
		2,3,4,7,8-P ₅ CDF	0.5	0.5
	6	1,2,3,4,7,8-H ₆ CDF	0.1	0.1
		1,2,3,6,7,8-H ₆ CDF	0.1	0.1
		1,2,3,7,8,9-H ₆ CDF	0.1	0.1
		2,3,4,6,7,8-H ₆ CDF	0.1	0.1
	7	1,2,3,4,6,7,8-H ₇ CDF	0.01	0.01
		1,2,3,4,7,8,9-H ₇ CDF	0.01	0.01
	8	1,2,3,4,6,7,8,9-O ₈ CDF	0.001	0.0001
コ プ ラ ナ P C B	ノンオルト (Non-ortho)	3,4,4',5-T ₄ CB	—	0.0001
		3,3',4,4'-T ₄ CB	0.0005	0.0001
		3,3',4,4',5-P ₅ CB	0.1	0.1
		3,3',4,4',5,5'-H ₆ CB	0.01	0.01
	モノオルト (Mono-ortho)	2',3,4,4',5-P ₅ CB	0.0001	0.0001
		2,3',4,4',5-P ₅ CB	0.0001	0.0001
		2,3,3',4,4'-P ₅ CB	0.0001	0.0001
		2,3,4,4',5-P ₅ CB	0.0005	0.0005
		2,3',4,4',5,5'-H ₆ CB	0.00001	0.00001
		2,3,3',4,4',5-H ₆ CB	0.0005	0.0005
		2,3,3',4,4',5'-H ₆ CB	0.0005	0.0005
		2,3,3',4,4',5,5'-H ₇ CB	0.0001	0.0001
	ジオルト (Di-ortho)	2,2',3,4,4',5,5'-H ₇ CB	0.00001	—
		2,2',3,3',4,4',5-H ₇ CB	0.0001	—

※ PCDD 及び PCDF は、I-TEF(1988)、コプラナ PCB は WHO/ICPS-TEF(1993)

分析項目	1	2	3	4	5	6
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	7	8	9	10	11	12
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	13	14	15	16	17	18
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	19	20	21	22	23	24
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	25	26	27	28	29	30
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	31	32	33	34	35	36
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	37	38	39	40	41	42
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	43	44	45	46	47	48
2,3,7,8-T4BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDD/1,2,3,6,7,8-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6BrDD	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,7,8-T4BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6BrDF	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D.：定量下限値未満

定量下限： 4臭素化物；0.1 pg/g, 5臭素化物；0.5 pg/g, 6臭素化物；5 pg/g

分析項目	WHO-TEF (1998)	1	2	3	4	5	6	7	8
2,3,7,8-T4CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,6,8-T4CDD	-	0.06	0.09	0.58	0.05	0.18	0.17	0.05	0.09
1,3,7,9-T4CDD	-	0.01	0.02	0.12	0.01	0.02	0.04	0.01	0.02
その他のT4CDDs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のP5CDDs	-	N.D.	0.01	0.05	N.D.	0.02	0.03	N.D.	0.01
1,2,3,4,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDDs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDD	0.01	0.02	N.D.	0.02	0.06	0.03	0.02	N.D.	0.05
その他のH7CDD	-	N.D.	N.D.	N.D.	N.D.	0.03	N.D.	N.D.	N.D.
O8CDD	0.0001	0.09	0.08	0.09	0.2	0.22	0.13	0.08	0.25
2,3,7,8-T4CDF	0.1	N.D.	N.D.	0.01	0.01	0.01	0.01	N.D.	N.D.
1,3,6,8-T4CDF	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のT4CDFs	-	0.01	N.D.	0.02	N.D.	0.03	N.D.	N.D.	N.D.
1,2,3,7,8-P5CDF	0.05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5CDF	0.5	N.D.	N.D.	N.D.	0.01	N.D.	0.01	N.D.	N.D.
その他のP5CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	N.D.	N.D.
1,2,3,4,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8,9-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH7CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
O8CDF	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(PCDDs総和)	-	0.00021	0.000080	0.00021	0.00062	0.00032	0.00021	0.000080	0.00053
TEQ(PCDFs総和)	-	0	0	0.0010	0.0060	0.0010	0.0060	0	0
TEQ(PCDD/Fs総和)	-	0.00021	0.000080	0.0012	0.0066	0.0013	0.0062	0.000080	0.00053
3,4,4',5-T4CB(#81)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3,3',4,4'-T4CB(#77)	0.0001	0.3	0.1	0.4	0.2	0.5	0.3	N.D.	0.2
3,3',4,4',5-P5CB(#126)	0.1	N.D.	N.D.	0.2	0.1	0.3	0.2	N.D.	0.1
3,3',4,4',5,5'-H6CB(#169)	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2',3,4,4',5-P5CB(#123)	0.0001	N.D.	N.D.	2	N.D.	5	N.D.	N.D.	N.D.
2,3',4,4',5-P5CB(#118)	0.0001	9	6	35	11	86	14	3	20
2,3,4,4',5-P5CB(#114)	0.0005	N.D.	N.D.	N.D.	N.D.	1	N.D.	N.D.	N.D.
2,3,3',4,4'-P5CB(#105)	0.0001	3	2	9	4	23	4	N.D.	5
2,3',4,4',5,5'-H6CB(#167)	0.00001	1	N.D.	5	N.D.	11	4	N.D.	3
2,3,3',4,4',5-H6CB(#156)	0.0005	N.D.	N.D.	7	1	12	2	N.D.	2
2,3,3',4,4',5'-H6CB(#157)	0.0005	N.D.	N.D.	1	N.D.	2	N.D.	N.D.	N.D.
2,3,3',4,4',5,5'-H7CB(#189)	0.0001	N.D.	N.D.	1	N.D.	2	N.D.	N.D.	N.D.
TEQ(Non-ortho PCBs)	-	0.00003	0.000010	0.020	0.010	0.030	0.020	0	0.010
TEQ(Mono-ortho PCBs)	-	0.0012	0.00080	0.0088	0.0020	0.019	0.0028	0.00030	0.0035
TEQ(Co-PCBs総和)	-	0.0012	0.00081	0.029	0.012	0.049	0.023	0.00030	0.014
TEQ(ダイオキシン類総和)	-	0.0014	0.00082	0.030	0.019	0.050	0.029	0.00031	0.015

N.D. : 定量下限値未満, 定量下限 : 4,5塩素化物 ; 0.01 pg/g, 6,7塩素化物 ; 0.02 pg/g, 8塩素化物 ; 0.05 pg/g
 定量下限 : Non-ortho ; 0.1 pg/g, Mono-ortho ; 1 pg/g

分析項目	WHO-TEF (1998)	9	10	11	12	13	14	15	16
2,3,7,8-T4CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,6,8-T4CDD	-	0.14	0.16	0.04	0.32	0.05	0.5	0.08	0.26
1,3,7,9-T4CDD	-	0.03	0.03	0.01	0.06	0.01	0.06	0.03	0.06
その他のT4CDDs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5CDD	1	N.D.	0.02	N.D.	0.02	N.D.	N.D.	N.D.	N.D.
その他のP5CDDs	-	0.03	0.01	N.D.	0.02	N.D.	0.04	0.02	0.08
1,2,3,4,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDDs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.03	0.03
1,2,3,4,6,7,8-H7CDD	0.01	0.02	0.03	N.D.	0.03	0.04	0.02	0.03	0.06
その他のH7CDD	-	0.02	N.D.	N.D.	0.02	N.D.	N.D.	0.02	0.03
O8CDD	0.0001	0.12	0.11	0.07	0.22	0.2	0.09	0.11	0.3
2,3,7,8-T4CDF	0.1	0.03	0.03	N.D.	0.03	0.01	N.D.	0.03	0.02
1,3,6,8-T4CDF	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01
その他のT4CDFs	-	0.04	0.01	N.D.	0.01	N.D.	0.02	N.D.	0.31
1,2,3,7,8-P5CDF	0.05	N.D.	0.01	N.D.	0.02	N.D.	N.D.	0.01	N.D.
2,3,4,7,8-P5CDF	0.5	0.01	0.04	N.D.	0.04	0.01	N.D.	0.01	0.01
その他のP5CDFs	-	0.02	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.02
1,2,3,4,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	0.02	N.D.	N.D.	N.D.	N.D.
その他のH6CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02
1,2,3,4,7,8,9-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH7CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
O8CDF	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(PCDDs総和)	-	0.00021	0.020	0.0000070	0.020	0.00042	0.00021	0.00031	0.00063
TEQ(PCDFs総和)	-	0.0080	0.024	0	0.026	0.0060	0	0.0085	0.0072
TEQ(PCDD/Fs総和)	-	0.0082	0.044	0.0000070	0.046	0.0064	0.00021	0.0088	0.0078
3,4,4',5-T4CB(#81)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3,3',4,4'-T4CB(#77)	0.0001	0.5	0.8	N.D.	0.8	0.3	0.1	1	0.5
3,3',4,4',5-P5CB(#126)	0.1	0.2	0.4	N.D.	0.7	0.2	N.D.	0.2	0.1
3,3',4,4',5,5'-H6CB(#169)	0.01	N.D.	0.1	N.D.	0.2	N.D.	N.D.	N.D.	N.D.
2',3,4,4',5-P5CB(#123)	0.0001	N.D.	2	N.D.	3	1	N.D.	2	N.D.
2,3',4,4',5-P5CB(#118)	0.0001	21	47	3	84	42	4	28	11
2,3,4,4',5-P5CB(#114)	0.0005	N.D.	N.D.	N.D.	2	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4'-P5CB(#105)	0.0001	6	15	1	23	14	1	7	3
2,3',4,4',5,5'-H6CB(#167)	0.00001	2	10	N.D.	9	10	N.D.	6	2
2,3,3',4,4',5-H6CB(#156)	0.0005	2	5	N.D.	9	4	N.D.	3	N.D.
2,3,3',4,4',5'-H6CB(#157)	0.0005	N.D.	1	N.D.	3	1	N.D.	N.D.	N.D.
2,3,3',4,4',5,5'-H7CB(#189)	0.0001	N.D.	N.D.	N.D.	1	N.D.	N.D.	N.D.	N.D.
TEQ(Non-ortho PCBs)	-	0.020	0.041	0	0.072	0.020	0.000010	0.020	0.010
TEQ(Mono-ortho PCBs)	-	0.0037	0.0095	0.00040	0.018	0.0083	0.00050	0.0053	0.0014
TEQ(Co-PCBs総和)	-	0.024	0.051	0.00040	0.090	0.028	0.00051	0.025	0.011
TEQ(ダイオキシン類総和)	-	0.032	0.095	0.00041	0.14	0.034	0.00072	0.034	0.019

N.D. : 定量下限値未満, 定量下限 : 4,5塩素化物 ; 0.01 pg/g, 6,7塩素化物 ; 0.02 pg/g, 8塩素化物 ; 0.05 pg/g
 定量下限 : Non-ortho ; 0.1 pg/g, Mono-ortho ; 1 pg/g

分析項目	WHO-TEF (1998)	17	18	19	20	21	22	23	24
2,3,7,8-T4CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,6,8-T4CDD	-	0.5	0.46	0.1	0.16	0.51	0.29	0.5	3.1
1,3,7,9-T4CDD	-	0.08	0.17	0.02	0.02	0.11	0.06	0.12	0.64
その他のT4CDDs	-	N.D.	0.2	N.D.	N.D.	0.01	N.D.	N.D.	0.07
1,2,3,7,8-P5CDD	1	0.01	0.02	N.D.	N.D.	N.D.	N.D.	0.02	N.D.
その他のP5CDDs	-	0.05	0.25	0.02	0.02	0.04	0.03	0.05	0.31
1,2,3,4,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.03	N.D.
1,2,3,6,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.05	N.D.
1,2,3,7,8,9-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDDs	-	N.D.	0.17	0.03	N.D.	N.D.	N.D.	0.03	0.12
1,2,3,4,6,7,8-H7CDD	0.01	0.08	0.09	0.04	0.04	0.02	0.08	0.3	0.05
その他のH7CDD	-	0.04	0.08	0.03	0.02	N.D.	N.D.	0.04	0.06
O8CDD	0.0001	0.6	0.36	0.23	0.15	0.1	0.36	1.2	0.31
2,3,7,8-T4CDF	0.1	0.01	0.05	0.02	N.D.	N.D.	N.D.	N.D.	0.02
1,3,6,8-T4CDF	-	N.D.	0.06	N.D.	N.D.	N.D.	N.D.	N.D.	0.01
その他のT4CDFs	-	0.02	1.7	0.03	N.D.	0.02	0.02	0.03	0.21
1,2,3,7,8-P5CDF	0.05	N.D.	0.04	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5CDF	0.5	0.02	0.05	0.01	N.D.	N.D.	N.D.	0.03	0.01
その他のP5CDFs	-	N.D.	0.62	N.D.	N.D.	N.D.	N.D.	N.D.	0.05
1,2,3,4,7,8-H6CDF	0.1	N.D.	0.04	N.D.	N.D.	N.D.	N.D.	0.04	N.D.
1,2,3,6,7,8-H6CDF	0.1	N.D.	0.03	N.D.	N.D.	N.D.	N.D.	0.04	N.D.
1,2,3,7,8,9-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,6,7,8-H6CDF	0.1	N.D.	0.06	N.D.	N.D.	N.D.	N.D.	0.04	N.D.
その他のH6CDFs	-	N.D.	0.21	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDF	0.01	0.03	0.1	N.D.	N.D.	N.D.	0.02	0.1	N.D.
1,2,3,4,7,8,9-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH7CDFs	-	N.D.	0.05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
O8CDF	0.0001	N.D.	0.06	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(PCDDs総和)	-	0.011	0.021	0.00042	0.00042	0.00021	0.00084	0.031	0.00053
TEQ(PCDFs総和)	-	0.011	0.046	0.0070	0	0	0.00020	0.028	0.0070
TEQ(PCDD/Fs総和)	-	0.022	0.067	0.0074	0.00042	0.00021	0.0010	0.059	0.0075
3,4,4',5-T4CB(#81)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3,3',4,4'-T4CB(#77)	0.0001	0.3	1	0.4	0.1	0.3	0.1	0.1	0.2
3,3',4,4',5-P5CB(#126)	0.1	0.1	0.2	0.2	N.D.	0.1	N.D.	0.2	0.1
3,3',4,4',5,5'-H6CB(#169)	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2',3,4,4',5-P5CB(#123)	0.0001	N.D.	N.D.	1	N.D.	N.D.	N.D.	N.D.	N.D.
2,3',4,4',5-P5CB(#118)	0.0001	15	11	37	5	9	4	8	14
2,3,4,4',5-P5CB(#114)	0.0005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4'-P5CB(#105)	0.0001	4	3	11	1	3	1	2	4
2,3',4,4',5,5'-H6CB(#167)	0.00001	3	2	10	1	2	N.D.	2	2
2,3,3',4,4',5-H6CB(#156)	0.0005	1	1	4	N.D.	1	N.D.	1	1
2,3,3',4,4',5'-H6CB(#157)	0.0005	N.D.	N.D.	1	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4',5,5'-H7CB(#189)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(Non-ortho PCBs)	-	0.010	0.020	0.020	0.000010	0.010	0.000010	0.020	0.010
TEQ(Mono-ortho PCBs)	-	0.0024	0.0019	0.0075	0.00061	0.0017	0.00050	0.0015	0.0023
TEQ(Co-PCBs総和)	-	0.012	0.022	0.028	0.00062	0.012	0.00051	0.022	0.012
TEQ(ダイオキシン類総和)	-	0.034	0.089	0.035	0.0010	0.012	0.0015	0.081	0.020

N.D. : 定量下限値未満, 定量下限 : 4,5塩素化物 ; 0.01 pg/g, 6,7塩素化物 ; 0.02 pg/g, 8塩素化物 ; 0.05 pg/g
 定量下限 : Non-ortho ; 0.1 pg/g, Mono-ortho ; 1 pg/g

分析項目	WHO-TEF (1998)	25	26	27	28	29	30	31	32
2,3,7,8-T4CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,6,8-T4CDD	-	0.13	0.18	0.33	0.2	0.09	0.06	0.12	0.07
1,3,7,9-T4CDD	-	0.02	0.03	0.06	0.05	0.03	0.01	0.02	0.01
その他のT4CDDs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のP5CDDs	-	0.02	0.04	0.03	0.04	0.01	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDDs	-	N.D.	0.06	N.D.	0.03	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDD	0.01	0.03	0.04	0.05	0.03	N.D.	0.02	0.03	0.03
その他のH7CDD	-	N.D.	0.03	0.02	0.03	N.D.	0.02	0.02	N.D.
O8CDD	0.0001	0.15	0.19	0.28	0.2	0.15	0.24	0.24	0.17
2,3,7,8-T4CDF	0.1	0.02	0.02	0.02	0.02	N.D.	0.02	0.01	0.02
1,3,6,8-T4CDF	-	N.D.	N.D.	N.D.	0.01	N.D.	N.D.	N.D.	N.D.
その他のT4CDFs	-	N.D.	0.07	0.03	0.17	N.D.	N.D.	0.03	N.D.
1,2,3,7,8-P5CDF	0.05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5CDF	0.5	0.01	0.01	0.02	0.01	N.D.	0.01	N.D.	N.D.
その他のP5CDFs	-	N.D.	0.03	0.02	0.02	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDF	0.01	N.D.	0.02	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8,9-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH7CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
O8CDF	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(PCDDs総和)	-	0.00032	0.00042	0.00053	0.00032	0.000015	0.00022	0.00032	0.00032
TEQ(PCDFs総和)	-	0.0070	0.0072	0.012	0.0070	0	0.0070	0.0010	0.0020
TEQ(PCDD/Fs総和)	-	0.0073	0.0076	0.013	0.0073	0.000015	0.0072	0.0013	0.0023
3,4,4',5-T4CB(#81)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3,3',4,4'-T4CB(#77)	0.0001	0.5	0.2	0.6	0.6	0.4	0.8	0.2	0.6
3,3',4,4',5-P5CB(#126)	0.1	0.2	N.D.	0.3	0.1	N.D.	0.3	N.D.	0.1
3,3',4,4',5,5'-H6CB(#169)	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2',3,4,4',5-P5CB(#123)	0.0001	N.D.	N.D.	1	N.D.	N.D.	N.D.	N.D.	1
2,3',4,4',5-P5CB(#118)	0.0001	15	9	31	14	6	7	10	26
2,3,4,4',5-P5CB(#114)	0.0005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4'-P5CB(#105)	0.0001	5	3	10	4	2	2	3	7
2,3',4,4',5,5'-H6CB(#167)	0.00001	3	2	7	3	1	N.D.	1	6
2,3,3',4,4',5-H6CB(#156)	0.0005	2	N.D.	3	1	N.D.	N.D.	1	2
2,3,3',4,4',5'-H6CB(#157)	0.0005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4',5,5'-H7CB(#189)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(Non-ortho PCBs)	-	0.020	0.000020	0.030	0.010	0.000040	0.030	0.000020	0.010
TEQ(Mono-ortho PCBs)	-	0.0030	0.0012	0.0058	0.0023	0.00081	0.00090	0.0018	0.0045
TEQ(Co-PCBs総和)	-	0.023	0.0012	0.036	0.012	0.00085	0.031	0.0018	0.015
TEQ(ダイオキシン類総和)	-	0.030	0.0088	0.049	0.019	0.00088	0.038	0.0031	0.017

N.D. : 定量下限値未満, 定量下限 : 4,5塩素化物 ; 0.01 pg/g, 6,7塩素化物 ; 0.02 pg/g, 8塩素化物 ; 0.05 pg/g
 定量下限 : Non-ortho ; 0.1 pg/g, Mono-ortho ; 1 pg/g

分析項目	WHO-TEF (1998)	33	34	35	36	37	38	39	40
2,3,7,8-T4CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,6,8-T4CDD	-	0.22	0.15	0.05	0.05	0.07	0.17	0.06	0.12
1,3,7,9-T4CDD	-	0.04	0.04	0.01	0.02	0.01	0.04	0.02	0.04
その他のT4CDDs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8-P5CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のP5CDDs	-	0.01	0.01	N.D.	N.D.	N.D.	0.03	N.D.	0.01
1,2,3,4,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDDs	-	N.D.	N.D.	N.D.	N.D.	0.02	0.03	N.D.	0.02
1,2,3,4,6,7,8-H7CDD	0.01	N.D.	0.03	0.02	0.04	0.04	0.03	N.D.	0.04
その他のH7CDD	-	N.D.	0.03	0.03	0.03	0.02	0.03	N.D.	0.04
O8CDD	0.0001	0.09	0.21	0.27	0.72	0.37	0.2	0.18	0.35
2,3,7,8-T4CDF	0.1	N.D.	0.01	0.02	N.D.	N.D.	0.02	N.D.	N.D.
1,3,6,8-T4CDF	-	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	N.D.	N.D.
その他のT4CDFs	-	0.01	0.02	0.04	N.D.	N.D.	0.05	N.D.	N.D.
1,2,3,7,8-P5CDF	0.05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5CDF	0.5	N.D.	N.D.	0.02	N.D.	N.D.	N.D.	N.D.	N.D.
その他のP5CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	N.D.	N.D.
1,2,3,4,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	0.02	N.D.	N.D.	0.02
1,2,3,4,7,8,9-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH7CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
O8CDF	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(PCDDs総和)	-	0.0000090	0.00032	0.00023	0.00047	0.00044	0.00032	0.000018	0.00044
TEQ(PCDFs総和)	-	0	0.0010	0.012	0	0.00020	0.0020	0	0.00020
TEQ(PCDD/Fs総和)	-	0.0000090	0.0013	0.012	0.00047	0.00064	0.0023	0.000018	0.00064
3,4,4',5-T4CB(#81)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3,3',4,4'-T4CB(#77)	0.0001	0.3	0.3	0.8	0.1	0.3	0.5	N.D.	0.1
3,3',4,4',5-P5CB(#126)	0.1	N.D.	0.1	0.3	N.D.	N.D.	0.2	N.D.	N.D.
3,3',4,4',5,5'-H6CB(#169)	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2',3,4,4',5-P5CB(#123)	0.0001	1	1	1	N.D.	N.D.	N.D.	N.D.	N.D.
2,3',4,4',5-P5CB(#118)	0.0001	20	16	22	3	7	22	2	5
2,3,4,4',5-P5CB(#114)	0.0005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4'-P5CB(#105)	0.0001	8	4	7	N.D.	2	8	N.D.	1
2,3',4,4',5,5'-H6CB(#167)	0.00001	3	2	5	N.D.	1	2	N.D.	1
2,3,3',4,4',5-H6CB(#156)	0.0005	3	2	2	N.D.	N.D.	2	N.D.	N.D.
2,3,3',4,4',5'-H6CB(#157)	0.0005	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4',5,5'-H7CB(#189)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(Non-ortho PCBs)	-	0.000030	0.010	0.030	0.000010	0.000030	0.020	0	0.000010
TEQ(Mono-ortho PCBs)	-	0.0049	0.0031	0.0041	0.00030	0.00091	0.0040	0.00020	0.00061
TEQ(Co-PCBs総和)	-	0.0049	0.013	0.034	0.00031	0.00094	0.024	0.00020	0.00062
TEQ(ダイオキシン類総和)	-	0.0050	0.014	0.046	0.00078	0.0016	0.026	0.00022	0.0013

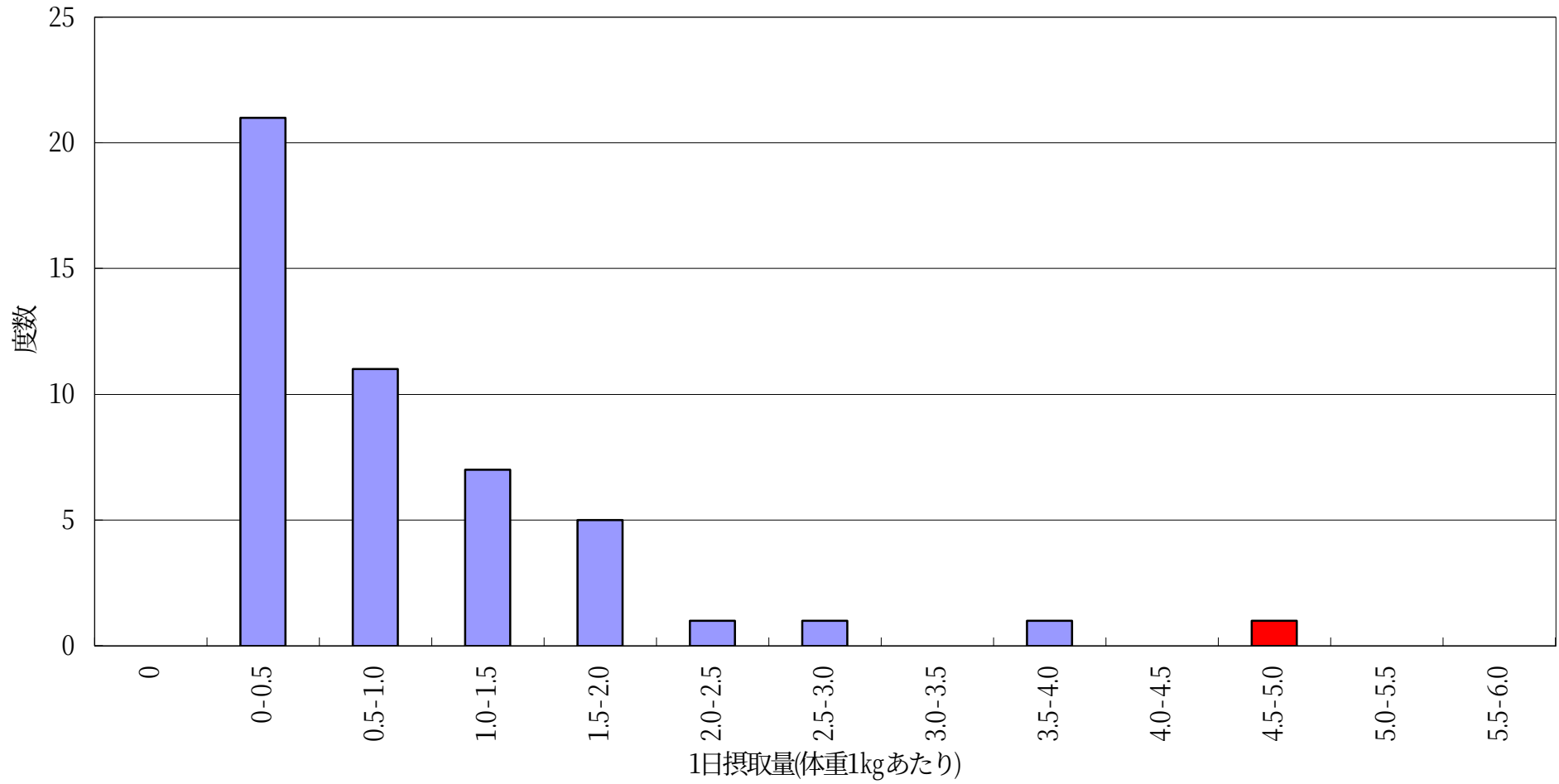
N.D. : 定量下限値未満, 定量下限 : 4,5塩素化物 ; 0.01 pg/g, 6,7塩素化物 ; 0.02 pg/g, 8塩素化物 ; 0.05 pg/g
 定量下限 : Non-ortho ; 0.1 pg/g, Mono-ortho ; 1 pg/g

分析項目	WHO-TEF (1998)	41	42	43	44	45	46	47	48
2,3,7,8-T4CDD	1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,3,6,8-T4CDD	-	0.05	1.9	0.17	0.2	0.6	0.08	0.09	0.23
1,3,7,9-T4CDD	-	0.02	0.33	0.04	0.04	0.1	0.02	0.02	0.03
その他のT4CDDs	-	N.D.	0.03	N.D.	N.D.	0.01	N.D.	N.D.	N.D.
1,2,3,7,8-P5CDD	1	N.D.	N.D.	N.D.	0.01	N.D.	0.01	N.D.	N.D.
その他のP5CDDs	-	0.01	0.14	0.01	0.03	0.05	N.D.	0.01	N.D.
1,2,3,4,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDD	0.1	N.D.	N.D.	N.D.	0.02	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDD	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH6CDDs	-	N.D.	0.02	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDD	0.01	N.D.	0.05	0.02	0.08	0.05	0.04	0.04	N.D.
その他のH7CDD	-	N.D.	0.03	N.D.	0.03	0.02	N.D.	0.03	0.02
O8CDD	0.0001	0.07	0.39	0.12	0.35	0.19	0.16	0.25	0.13
2,3,7,8-T4CDF	0.1	0.02	0.01	0.01	0.01	0.01	0.01	0.01	N.D.
1,3,6,8-T4CDF	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のT4CDFs	-	0.01	0.14	0.04	0.01	0.03	0.01	0.03	0.01
1,2,3,7,8-P5CDF	0.05	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,7,8-P5CDF	0.5	N.D.	N.D.	0.01	0.02	0.01	0.02	N.D.	N.D.
その他のP5CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	0.03	N.D.	N.D.	N.D.	N.D.
1,2,3,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	0.02	N.D.	N.D.	N.D.	N.D.
1,2,3,7,8,9-H6CDF	0.1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,4,6,7,8-H6CDF	0.1	N.D.	N.D.	N.D.	0.02	N.D.	N.D.	N.D.	N.D.
その他のH6CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
1,2,3,4,6,7,8-H7CDF	0.01	N.D.	N.D.	N.D.	0.03	N.D.	N.D.	N.D.	N.D.
1,2,3,4,7,8,9-H7CDF	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
その他のH7CDFs	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
O8CDF	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(PCDDs総和)	-	0.0000070	0.00054	0.00021	0.013	0.00052	0.010	0.00043	0.000013
TEQ(PCDFs総和)	-	0.0020	0.0010	0.0060	0.018	0.0060	0.011	0.0010	0
TEQ(PCDD/Fs総和)	-	0.0020	0.0015	0.0062	0.031	0.0065	0.021	0.0014	0.000013
3,4,4',5-T4CB(#81)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
3,3',4,4'-T4CB(#77)	0.0001	0.5	0.1	0.3	0.3	0.5	0.2	0.1	0.1
3,3',4,4',5-P5CB(#126)	0.1	0.2	N.D.	0.2	0.2	0.1	0.2	N.D.	N.D.
3,3',4,4',5,5'-H6CB(#169)	0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2',3,4,4',5-P5CB(#123)	0.0001	N.D.	N.D.	N.D.	N.D.	1	1	N.D.	N.D.
2,3',4,4',5-P5CB(#118)	0.0001	17	5	13	18	20	20	3	4
2,3,4,4',5-P5CB(#114)	0.0005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2,3,3',4,4'-P5CB(#105)	0.0001	5	2	4	5	6	7	1	1
2,3',4,4',5,5'-H6CB(#167)	0.00001	5	N.D.	2	4	3	3	N.D.	N.D.
2,3,3',4,4',5-H6CB(#156)	0.0005	2	N.D.	2	2	2	4	N.D.	N.D.
2,3,3',4,4',5'-H6CB(#157)	0.0005	N.D.	N.D.	N.D.	N.D.	N.D.	2	N.D.	N.D.
2,3,3',4,4',5,5'-H7CB(#189)	0.0001	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
TEQ(Non-ortho PCBs)	-	0.020	0.000010	0.020	0.020	0.010	0.020	0.000010	0.000010
TEQ(Mono-ortho PCBs)	-	0.0033	0.00070	0.0027	0.0033	0.0037	0.0058	0.00040	0.00050
TEQ(Co-PCBs総和)	-	0.023	0.00071	0.023	0.023	0.014	0.026	0.00041	0.00051
TEQ(ダイオキシン類総和)	-	0.025	0.0022	0.029	0.054	0.021	0.047	0.0018	0.00052

N.D. : 定量下限値未満, 定量下限 : 4,5塩素化物 ; 0.01 pg/g, 6,7塩素化物 ; 0.02 pg/g, 8塩素化物 ; 0.05 pg/g
 定量下限 : Non-ortho ; 0.1 pg/g, Mono-ortho ; 1 pg/g

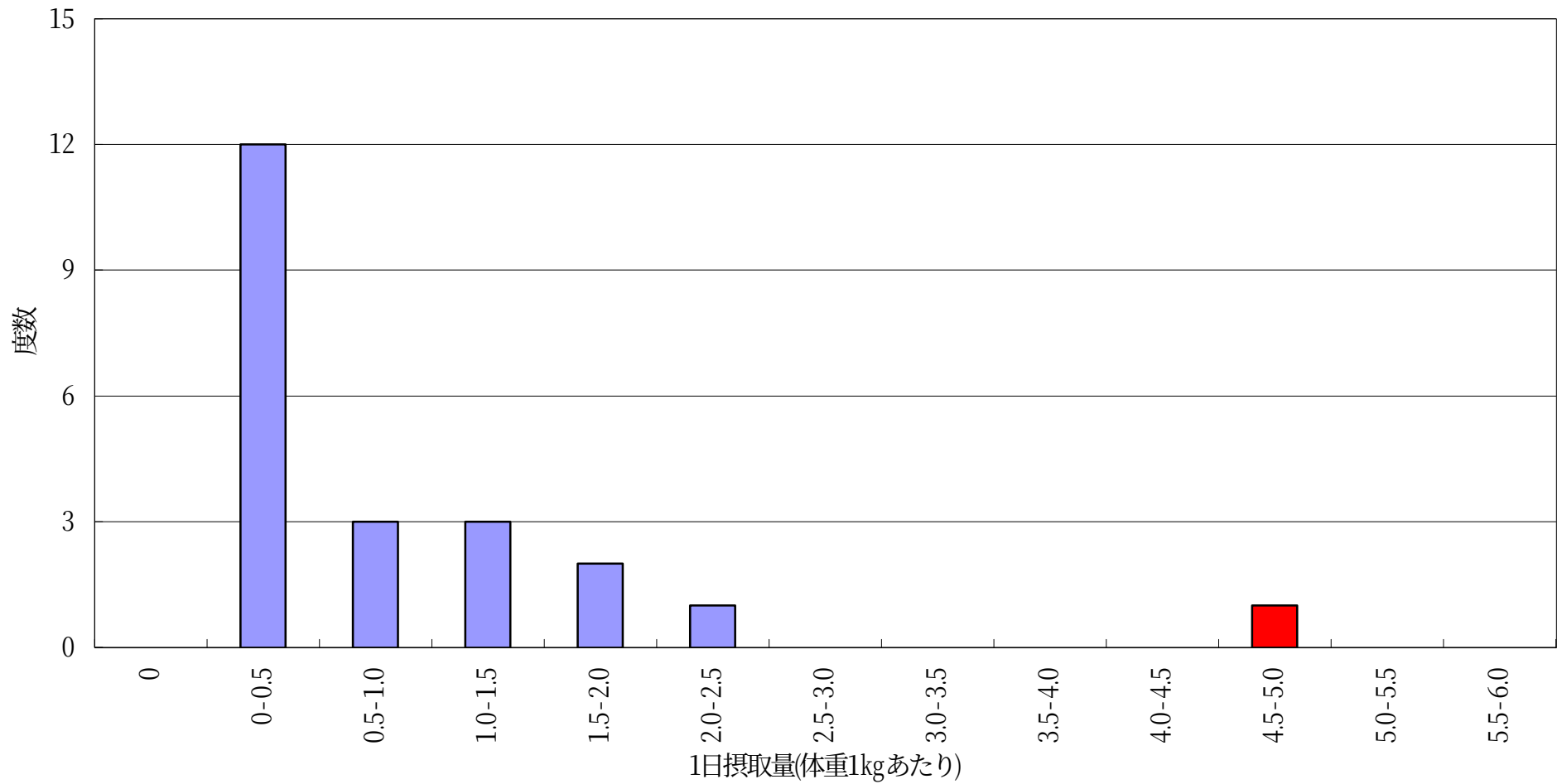
平成9,10年度
PCDDs/PCDFs+Co-PCBs

N.D.=0



平成9年度
PCDDs/PCDFs+Co-PCBs

N.D.=0



平成10年度
PCDDs/PCDFs+Co-PCBs

N.D.=0

