p-ジクロロベンゼンのラット及びマウスを用いた
吸 入 に よ る が ん 原 性 予 備 試 験 報 告 書

APPENDIX

（A1－1～A９－２）
2 週間試験：ラット/0113；マウス/0114

APPENDIXES

APPENDIXES (CONTINUED)

APPENDIX A 1-1

CLINICAL OBSERVATION : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0 1	0-0 2	1-1 1	1-1 2	1-2 1	1-2 2	1-3 1	1-3 2	1-4 1	1-4 2	1-5 1	1-5 2	1-6 1	1-6 2
LACRYMATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	1	0	0	0	0	0	0	0	0	0	0
GUM	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	1	0	0	0	0	0	0	0	0	0	0
LOOSE STOOL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	1	1	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	1	2	1	1	1	1	1	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	1	1	1	1	1	1	0	0	0	0	0

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 1-7 1	1-7 2	2-1 1	2-1 2	2-2 1	2-2 2	2-3 1	2-3 2	2-4 1	2-4 2	2-5 1	2-5 2	2-6 1	2-6 2
LACRYMATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUM	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOOSE STOOL	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
LACRYMATION	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0
GUM	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0
LOOSE STOOL	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0

APPENDIX A 1-2

CLINICAL OBSERVATION : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0 1	0-0 2	1-1 1	1-1 2	1-2 1	1-2 2	1-3 1	1-3 2	1-4 1	1-4 2	1-5 1	1-5 2	1-6 1	1-6 2
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	1	1	1
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	1	1	1	1	1	1	0	0	0	0	0
LACRYMATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	1	0	1	0	0	0	0	0	1	1	1	1	1

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 1-7 1	1-7 2	2-1 1	2-1 2	2-2 1	2-2 2	2-3 1	2-3 2	2-4 1	2-4 2	2-5 1	2-5 2	2-6 1	2-6 2
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	1	1	2	2	2	2	2	2	2	2	2	2	2	2
SOILED PERI GENITALIA	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LACRYMATION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	1	1	1	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 2-7 1
LOSS OF HAIR	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	1
SOILED PERI GENITALIA	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0
LACRYMATION	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0

APPENDIX A 1-3

CLINICAL OBSERVATION : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 0-0 1	0-0 2	1-1 1	1-1 2	1-2 1	1-2 2	1-3 1	1-3 2	1-4 1	1-4 2	1-5 1	1-5 2	1-6 1	1-6 2
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	1	2	1	1	1	1	1	1
	600 ppm	0	0	0	0	0	0	0	5	5	5	5	5	5	5
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	1	1	1	1	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 1-7 1	1-7 2	2-1 1	2-1 2	2-2 1	2-2 2	2-3 1	2-3 2	2-4 1	2-4 2	2-5 1	2-5 2	2-6 1	2-6 2
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	1	1	1	1	1	1	1	0	0	0	1	1	1
	400 ppm	1	1	1	1	1	1	1	1	1	1	1	4	4	4
	600 ppm	0	5	4	4	4	4	4	4	4	4	4	7	7	7
LOSS OF HAIR	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : MALE

Clinical sign	Group Name	Administration Week-day 2-7 1
PILOERECTION	Control	0
	120 ppm	1
	180 ppm	0
	270 ppm	0
	400 ppm	3
	600 ppm	2
LOSS OF HAIR	Control	0
	120 ppm	1
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0

APPENDIX A 1-4

CLINICAL OBSERVATION : SUMMARY, MOSUE: FEMALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 0-0 1	0-0 2	1-1 1	1-1 2	1-2 1	1-2 2	1-3 1	1-3 2	1-4 1	1-4 2	1-5 1	1-5 2	1-6 1	1-6 2
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	2	2	2	2	2	2	2
LOSS OF HAIR	Control	1	1	1	1	1	1	0	0	0	1	1	1	1	1
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	1	1	0	0	0	0	0	1	1	1	1	1	1	1
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1 2

CLINICAL OBSERVATION (SUMMARY)
ALL ANIMALS

SEX : FEMALE

Clinical sign	Group Name	Administration Week-day 1-7 1	1-7 2	2-1 1	2-1 2	2-2 1	2-2 2	2-3 1	2-3 2	2-4 1	2-4 2	2-5 1	2-5 2	2-6 1	2-6 2
PILOERECTION	Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	600 ppm	0	3	3	3	3	3	3	3	3	3	3	3	3	2
LOSS OF HAIR	Control	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	120 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	270 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	400 ppm	1	1	1	1	1	1	1	0	0	0	0	0	0	0
	600 ppm	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Clinical sign	Group Name	Administration Week-day 2-7 1
PILOERECTION	Control	0
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	0
	600 ppm	0
LOSS OF HAIR	Control	2
	120 ppm	0
	180 ppm	0
	270 ppm	0
	400 ppm	1
	600 ppm	0

APPENDIX A 2-1

BODY WEIGHT CHANGES :SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-7	2-7
Control	129± 4	134± 5	156± 7	184± 11
120 ppm	130± 4	133± 5	157± 8	189± 12
180 ppm	129± 4	133± 5	155± 7	186± 9
270 ppm	129± 4	131± 4	155± 6	186± 8
400 ppm	129± 4	132± 5	157± 6	191± 8
600 ppm	129± 4	128± 3	147± 3*	179± 4

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 2-2

BODY WEIGHT CHANGES : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-7	2-7
Control	101± 4	102± 4	114± 4	127± 8
120 ppm	101± 4	104± 3	116± 4	129± 4
180 ppm	101± 4	102± 4	114± 6	127± 7
270 ppm	101± 4	102± 4	113± 4	128± 5
400 ppm	101± 4	101± 3	112± 4	127± 5
600 ppm	101± 4	101± 4	110± 5	126± 6

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 2-3

BODY WEIGHT CHANGES :SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-7	2-7
Control	23.0± 1.0	22.7± 0.9	24.5± 1.3	25.4± 1.2
120 ppm	23.0± 0.9	22.8± 0.9	24.1± 0.8	25.0± 0.6
180 ppm	23.0± 0.9	22.5± 0.9	23.9± 0.9	25.1± 0.9
270 ppm	23.0± 0.9	22.5± 0.9	23.9± 0.9	25.1± 0.8
400 ppm	23.0± 0.9	22.9± 0.8	24.8± 1.1	25.7± 1.0
600 ppm	23.0± 1.0	22.5± 1.1	24.0± 1.4	25.6± 0.9

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 2-4

BODY WEIGHT CHANGES : SUMMARY, MOSUE: FEMALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

BODY WEIGHT CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day 0-0	1-1	1-7	2-7
Control	19.1± 0.7	18.6± 0.6	19.6± 0.7	20.8± 0.4
120 ppm	19.1± 0.7	18.6± 0.8	19.6± 0.5	20.9± 0.9
180 ppm	19.1± 0.7	18.6± 0.7	19.5± 0.8	20.5± 1.0
270 ppm	19.1± 0.7	18.9± 0.8	19.7± 1.0	20.9± 1.0
400 ppm	19.1± 0.7	18.7± 0.8	19.8± 0.6	21.1± 1.0
600 ppm	19.1± 0.7	18.5± 0.5	19.7± 0.7	21.5± 1.1

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 3-1

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)
Control	14.8± 1.3	15.9± 1.4
120 ppm	15.1± 1.4	16.7± 1.5
180 ppm	15.3± 1.1	16.6± 1.4
270 ppm	14.2± 0.8	15.6± 1.1
400 ppm	14.0± 1.3	16.3± 0.9
600 ppm	12.6± 0.5**	16.2± 1.0

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 3-2

FOOD CONSUMPTION CHANGES : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration 1-7(7)	week-day(effective) 2-7(7)
Control	10.6± 0.5	11.3± 0.9
120 ppm	11.0± 0.2	11.2± 0.4
180 ppm	11.0± 0.7	11.1± 0.7
270 ppm	10.4± 0.7	11.1± 0.6
400 ppm	10.1± 0.4	11.2± 0.7
600 ppm	10.0± 0.5*	11.5± 0.6

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 3-3

FOOD CONSUMPTION CHANGES : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : MALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)
Control	4.1± 0.2	3.7± 0.2
120 ppm	4.0± 0.2	3.8± 0.2
180 ppm	3.7± 0.2**	3.8± 0.2
270 ppm	3.7± 0.2**	3.8± 0.4
400 ppm	4.0± 0.3	3.9± 0.3
600 ppm	3.6± 0.2**	4.2± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 3-4

FOOD CONSUMPTION CHANGES : SUMMARY, MOSUE : FEMALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
UNIT : g
REPORT TYPE : A1 2
SEX : FEMALE

FOOD CONSUMPTION CHANGES (SUMMARY)
ALL ANIMALS

Group Name	Administration week-day(effective) 1-7(7)	2-7(7)
Control	3.2± 0.3	3.1± 0.2
120 ppm	3.2± 0.3	3.3± 0.2
180 ppm	3.2± 0.3	3.3± 0.2
270 ppm	3.2± 0.3	3.5± 0.2**
400 ppm	3.1± 0.2	3.5± 0.2**
600 ppm	3.2± 0.4	4.1± 0.2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 4-1

HEMATOLOGY : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	10	8.21± 0.44	15.3± 0.7	44.9± 2.5	54.6± 1.0	922± 56
120 ppm	10	7.86± 0.39	14.8± 0.4	43.3± 2.6	55.1± 1.2	959± 44
180 ppm	10	8.04± 0.32	14.9± 0.4	43.8± 1.4	54.4± 0.9	937± 65
270 ppm	10	8.01± 0.28	14.7± 0.6	43.6± 1.3	54.5± 0.9	979± 55
400 ppm	10	7.89± 0.29	14.5± 0.6**	43.4± 1.3	55.0± 0.8	970± 139
600 ppm	10	7.95± 0.30	14.6± 0.4*	43.4± 1.7	54.6± 0.6	1048± 62**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHERS
Control	10	4.02± 1.33	0± 0	16± 5	1± 1	0± 0	6± 2	77± 6	1± 1
120 ppm	10	3.76± 0.82	0± 0	19± 5	0± 1	0± 0	5± 2	75± 5	1± 1
180 ppm	10	4.08± 0.71	0± 0	16± 6	0± 0	0± 0	6± 2	78± 8	0± 1
270 ppm	10	4.17± 0.98	0± 1	16± 4	1± 1	0± 0	5± 1	77± 4	1± 1
400 ppm	10	5.03± 1.49	0± 0	19± 6	1± 1	0± 0	5± 1	76± 6	1± 1
600 ppm	10	4.52± 1.48	0± 0	20± 3	0± 1	0± 0	5± 2	73± 4	1± 1

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX A 4-2

HEMATOLOGY : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV fℓ	PLATELET $10^3/\mu\ell$
Control	10	8.58± 0.26	16.3± 0.5	47.1± 1.7	54.8± 1.2	767± 62
120 ppm	10	8.37± 0.44	15.7± 0.5*	45.5± 2.6	54.3± 0.5	827± 38
180 ppm	10	8.41± 0.31	15.7± 0.4*	45.2± 2.1	53.7± 1.2*	755± 120
270 ppm	10	8.26± 0.22	15.4± 0.2**	44.6± 1.3	53.9± 0.5	845± 93
400 ppm	10	8.39± 0.31	15.7± 0.5*	45.4± 1.5	54.1± 0.7	839± 59
600 ppm	10	8.32± 0.32	15.6± 0.5**	44.7± 1.7	53.7± 0.5*	816± 91

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHERS
Control	10	4.36± 1.24	0± 0	14± 3	1± 1	0± 0	5± 2	80± 3	0± 1
120 ppm	10	4.27± 1.70	0± 0	15± 4	0± 0	0± 0	5± 2	80± 5	0± 0
180 ppm	10	4.55± 1.84	0± 1	16± 5	1± 1	0± 0	4± 1	78± 6	1± 1
270 ppm	10	4.67± 2.30	0± 0	14± 5	1± 1	0± 0	4± 2	81± 5	0± 0
400 ppm	10	5.98± 2.21	0± 1	15± 7	2± 1	0± 0	5± 2	77± 10	1± 1
600 ppm	10	5.38± 2.09	0± 1	16± 4	2± 1	0± 0	5± 2	76± 6	1± 1

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX A 4-3

HEMATOLOGY : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	9	9.03± 0.73	14.1± 1.0	41.6± 2.7	46.1± 1.3	980± 322
120 ppm	10	9.48± 0.26	14.7± 0.6	43.7± 1.6	46.2± 1.2	1038± 280
180 ppm	7	9.22± 0.41	14.5± 0.8	42.5± 1.6	46.1± 1.0	1061± 228
270 ppm	8	9.19± 0.59	14.2± 0.7	42.8± 2.6	46.6± 0.7	1097± 111
400 ppm	9	9.27± 0.32	14.5± 0.5	42.7± 1.7	46.2± 0.9	1129± 149
600 ppm	8	8.84± 0.55	13.8± 1.1	40.6± 3.0	45.8± 0.6	1251± 181

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHERS
Control	9	1.50± 0.94	0± 1	10± 3	1± 1	0± 0	1± 1	87± 3	0± 0
120 ppm	10	1.37± 0.63	1± 1	9± 3	1± 2	0± 0	1± 1	88± 4	0± 0
180 ppm	7	1.48± 0.85	0± 0	12± 4	1± 1	0± 0	1± 1	86± 5	0± 0
270 ppm	8	1.11± 0.38	1± 1	10± 3	1± 1	0± 0	2± 2	86± 3	0± 0
400 ppm	9	0.85± 0.28	1± 1	12± 4	1± 1	0± 0	1± 1	86± 4	0± 0
600 ppm	8	1.74± 0.99	1± 1	9± 2	2± 2	0± 0	2± 2	86± 4	0± 0

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX A 4-4

HEMATOLOGY : SUMMARY, MOSUE : FEMALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(1) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	RED BLOOD CELL $10^6/\mu\ell$	HEMOGLOBIN g/dℓ	HEMATOCRIT %	MCV f ℓ	PLATELET $10^3/\mu\ell$
Control	10	8.48± 0.98	13.3± 1.3	38.5± 4.3	45.4± 0.9	742± 229
120 ppm	9	9.02± 0.36	14.1± 0.7	41.1± 2.3	45.6± 1.3	922± 158
180 ppm	9	8.63± 0.65	13.4± 0.9	39.5± 2.9	45.8± 0.7	911± 198
270 ppm	10	8.96± 0.68	14.1± 0.9	40.8± 3.2	45.6± 1.1	939± 176
400 ppm	9	8.87± 0.47	13.9± 0.9	40.9± 2.9	46.1± 0.9	968± 128*
600 ppm	8	8.61± 0.60	13.6± 1.0	39.0± 2.9	45.3± 1.1	1163± 100**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

(HCL070)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HEMATOLOGY(2) (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	WBC $10^3/\mu\ell$	Differential WBC (%) N-BAND	N-SEG	EOSINO	BASO	MONO	LYMPHO	OTHERS
Control	10	1.22± 0.44	0± 1	11± 4	2± 1	0± 0	1± 1	86± 5	0± 0
120 ppm	9	1.39± 1.12	0± 1	11± 3	2± 2	0± 0	1± 1	85± 5	0± 0
180 ppm	9	1.32± 0.78	0± 0	10± 3	2± 1	0± 0	1± 2	87± 4	0± 0
270 ppm	10	1.23± 0.64	1± 1	12± 3	2± 2	0± 0	2± 1	83± 4	0± 0
400 ppm	9	1.23± 0.49	0± 1	12± 4	2± 1	0± 0	1± 1	84± 4	0± 0
600 ppm	8	1.21± 0.59	1± 1	16± 4*	1± 1	0± 0	1± 1	81± 4	0± 0

Significant difference ; * : $P \leqq 0.05$ ** : $P \leqq 0.01$ Test of Dunnett

APPENDIX A 5-1

BIOCHEMISTRY : SUMMARY, RAT : MALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ
Control	10	6.1± 0.1	3.6± 0.1	1.5± 0.1	0.37± 0.03	62± 10	18± 4	225± 47
120 ppm	10	6.1± 0.1	3.6± 0.1	1.5± 0.0	0.35± 0.05	61± 6	17± 2	219± 73
180 ppm	10	6.0± 0.1	3.6± 0.1	1.5± 0.0	0.41± 0.07	64± 10	18± 4	268± 145
270 ppm	10	6.1± 0.2	3.7± 0.1	1.5± 0.0	0.39± 0.06	64± 8	18± 3	243± 77
400 ppm	10	6.1± 0.2	3.7± 0.1	1.5± 0.0	0.38± 0.18	66± 12	19± 4	301± 230
600 ppm	10	6.3± 0.2	3.8± 0.1*	1.5± 0.0	0.34± 0.08	64± 10	19± 5	283± 155

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	G-GTP IU/ℓ	CPK IU/ℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	CALCIUM mg/dℓ
Control	10	1± 0	174± 20	209± 12	58± 4	14.2± 2.5	0.4± 0.1	11.0± 0.4
120 ppm	10	1± 1	181± 65	199± 17	59± 2	12.8± 2.3	0.4± 0.1	11.2± 0.4
180 ppm	10	1± 1	174± 37	203± 12	59± 4	13.4± 2.5	0.4± 0.0	11.1± 0.5
270 ppm	10	1± 1	184± 66	200± 8	60± 2	13.7± 2.2	0.4± 0.0	11.4± 0.5
400 ppm	10	1± 1	227± 123	196± 18	64± 4*	13.6± 2.1	0.4± 0.1	11.4± 0.6
600 ppm	10	0± 0	168± 31	190± 18	71± 2**	12.3± 2.4	0.4± 0.1	11.5± 0.6

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ	
Control	10	8.4±	0.8	138±	1	4.1±	0.3	104±	1
120 ppm	10	8.7±	1.4	138±	1	4.1±	0.4	104±	1
180 ppm	10	8.9±	1.2	139±	1	4.0±	0.4	104±	1
270 ppm	10	9.5±	1.3	139±	2	4.1±	0.4	103±	1*
400 ppm	10	9.2±	1.5	138±	1	4.2±	0.5	103±	2
600 ppm	10	9.6±	1.3	137±	2	4.3±	0.4	103±	1**

Significant difference : * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ
Control	10	5.8± 0.2	3.5± 0.1	1.5± 0.1	0.64± 0.10	59± 4	15± 1	247± 92
120 ppm	10	5.8± 0.1	3.5± 0.1	1.5± 0.0	0.61± 0.11	56± 6	14± 2	255± 103
180 ppm	10	5.9± 0.3	3.5± 0.1	1.5± 0.0	0.68± 0.15	60± 4	15± 1	299± 111
270 ppm	10	5.8± 0.2	3.5± 0.1	1.5± 0.1	0.66± 0.21	57± 6	15± 2	249± 98
400 ppm	10	5.8± 0.2	3.5± 0.1	1.6± 0.1	0.58± 0.15	56± 3	15± 1	190± 50
600 ppm	10	5.9± 0.2	3.6± 0.1	1.5± 0.0	0.55± 0.12	57± 4	15± 1	206± 73

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 5-2

BIOCHEMISTRY : SUMMARY, RAT : FEMALE

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	G-GTP IU/ℓ	CPK IU/ℓ	GLUCOSE mg/dℓ	T-CHOLESTEROL mg/dℓ	UREA NITROGEN mg/dℓ	CREATININE mg/dℓ	CALCIUM mg/dℓ
Control	10	1± 0	170± 46	190± 29	71± 4	15.6± 2.2	0.4± 0.0	10.7± 0.2
120 ppm	10	1± 0	156± 34	189± 16	75± 5	13.5± 1.5	0.4± 0.0	10.7± 0.3
180 ppm	10	1± 0	168± 41	190± 18	77± 4**	14.6± 2.4	0.4± 0.1	10.7± 0.4
270 ppm	10	1± 0	171± 34	187± 9	78± 4**	15.0± 1.9	0.4± 0.0	10.6± 0.3
400 ppm	10	1± 0	148± 38	190± 14	82± 3**	14.9± 1.5	0.4± 0.1	10.7± 0.3
600 ppm	10	1± 0	155± 30	177± 13	91± 5**	13.9± 1.9	0.4± 0.1	10.7± 0.4

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	INORGANIC PHOSPHORUS mg/dℓ		SODIUM mEq/ℓ		POTASSIUM mEq/ℓ		CHLORIDE mEq/ℓ	
Control	10	8.0±	1.5	138±	1	4.4±	1.2	106±	2
120 ppm	10	7.3±	1.5	137±	1	4.1±	0.4	106±	1
180 ppm	10	7.6±	1.1	138±	2	3.8±	0.3	108±	1*
270 ppm	10	8.2±	1.6	137±	2	4.3±	0.4	106±	1
400 ppm	10	7.9±	1.3	137±	1	3.9±	0.5	106±	1
600 ppm	10	8.4±	1.3	137±	1	4.3±	0.6	105±	1

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 5-3

BIOCHEMISTRY : SUMMARY, MOSUE : MALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ
Control	8	5.3± 0.2	3.0± 0.1	1.3± 0.0	0.46± 0.14	35± 3	12± 2	258± 71
120 ppm	9	5.5± 0.3	3.1± 0.1	1.3± 0.0	0.52± 0.33	39± 10	16± 4	328± 198
180 ppm	7	5.5± 0.1	3.1± 0.1	1.3± 0.1	0.51± 0.20	38± 4	18± 3	298± 109
270 ppm	8	5.5± 0.2	3.1± 0.1	1.3± 0.0	0.33± 0.07	40± 11	20± 7	275± 64
400 ppm	9	5.8± 0.2**	3.2± 0.1**	1.2± 0.1	0.46± 0.14	45± 10	25± 8**	321± 98
600 ppm	8	6.3± 0.2**	3.5± 0.1**	1.3± 0.1	0.28± 0.12	52± 14**	41± 10**	284± 106

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	CPK IU/ℓ		GLUCOSE mg/dℓ		T-CHOLESTEROL mg/dℓ		UREA NITROGEN mg/dℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ		SODIUM mEq/ℓ	
Control	8	111±	55	347±	21	92±	7	24.3±	5.1	9.4±	0.3	8.9±	2.0	150±	1
120 ppm	9	107±	35	352±	22	109±	8	25.7±	3.5	9.8±	0.3	9.6±	1.8	151±	2
180 ppm	7	173±	91	339±	25	117±	4	23.9±	3.9	9.8±	0.5	8.9±	1.2	148±	3
270 ppm	8	172±	82	387±	31	125±	6**	23.4±	1.7	9.7±	0.5	11.3±	2.8	151±	4
400 ppm	9	122±	37	324±	42	135±	13**	23.2±	3.1	10.1±	0.5**	10.0±	1.7	149±	2
600 ppm	8	107±	39	343±	62	195±	16**	20.2±	2.1	10.5±	0.3**	8.5±	2.1	149±	3

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	POTASSIUM mEq／ℓ		CHLORIDE mEq／ℓ	
Control	8	5.0±	0.5	120±	3
120 ppm	9	5.2±	0.3	120±	2
180 ppm	7	5.0±	0.5	118±	4
270 ppm	8	4.7±	0.5	119±	3
400 ppm	9	5.6±	0.5	119±	2
600 ppm	8	5.6±	0.8	116±	1**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 5-4

BIOCHEMISTRY : SUMMARY, MOSUE : FEMALE

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	TOTAL PROTEIN g/dℓ	ALBUMIN g/dℓ	A/G RATIO	T-BILIRUBIN mg/dℓ	GOT IU/ℓ	GPT IU/ℓ	LDH IU/ℓ
Control	9	5.1± 0.2	3.2± 0.2	1.7± 0.1	0.46± 0.22	42± 8	12± 2	309± 95
120 ppm	9	5.1± 0.2	3.2± 0.1	1.6± 0.1*	0.39± 0.13	40± 6	14± 3	315± 109
180 ppm	8	5.3± 0.1	3.3± 0.1	1.6± 0.1	0.42± 0.30	42± 10	16± 3	276± 116
270 ppm	8	5.6± 0.1**	3.4± 0.1*	1.6± 0.1*	0.40± 0.19	46± 10	18± 5*	312± 107
400 ppm	8	5.5± 0.3**	3.3± 0.2	1.5± 0.1**	0.31± 0.08	50± 20	21± 7**	310± 127
600 ppm	7	6.1± 0.3**	3.5± 0.2**	1.4± 0.0**	0.35± 0.16	54± 15	33± 10**	313± 110

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	CPK IU/ℓ		GLUCOSE mg/dℓ		T-CHOLESTEROL mg/dℓ		UREA NITROGEN mg/dℓ		CALCIUM mg/dℓ		INORGANIC PHOSPHORUS mg/dℓ		SODIUM mEq/ℓ	
Control	9	144±	57	308±	17	81±	5	20.5±	2.8	9.5±	0.4	8.3±	1.6	150±	4
120 ppm	9	136±	62	303±	37	98±	5**	20.2±	3.8	9.3±	0.3	9.6±	3.3	148±	2
180 ppm	8	102±	40	309±	38	102±	7**	19.6±	2.6	9.5±	0.4	9.6±	2.4	151±	3
270 ppm	8	131±	57	274±	21	109±	7**	21.0±	2.5	9.8±	0.3	10.3±	1.3	150±	4
400 ppm	8	239±	303	297±	30	131±	8**	19.0±	1.7	10.0±	0.6*	10.6±	2.7	151±	4
600 ppm	7	112±	58	331±	37	192±	14**	18.0±	2.1	10.2±	0.5**	9.8±	2.7	148±	1

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

BIOCHEMISTRY (SUMMARY)
SURVIVAL ANIMALS (2)

Group Name	NO. of Animals	POTASSIUM mEq／ℓ		CHLORIDE mEq／ℓ	
Control	9	5.2±	0.5	123±	3
120 ppm	9	5.0±	0.5	121±	2
180 ppm	8	5.1±	0.6	123±	2
270 ppm	8	5.4±	0.5	120±	3
400 ppm	8	5.3±	0.7	121±	2
600 ppm	7	5.5±	0.5	116±	2**

Significant difference ; * : P ≦ 0.05 ** : P ≦ 0.01 Test of Dunnett

APPENDIX A 6-1

GROSS FINDINGS : SUMMARY, RAT : MALE : ALL ANIMALS

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name / NO. of Animals	Control 10 (%)	120 ppm 10 (%)	180 ppm 10 (%)	270 ppm 10 (%)
liver	herniation		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name	400 ppm	600 ppm
		NO. of Animals	10 (%)	10 (%)
liver	herniation		1 (10)	0 (0)

APPENDIX A 6-2

GROSS FINDINGS : SUMMARY, RAT : FEMALE : ALL ANIMALS

(2Week STUDY)

Organ	Findings	Group Name / NO. of Animals	Control 10	(%)	120 ppm 10	(%)	180 ppm 10	(%)	270 ppm 10	(%)
thymus	red zone		0	(0)	0	(0)	0	(0)	0	(0)
liver	herniation		0	(0)	0	(0)	0	(0)	1	(10)
uterus	dilated lumen		0	(0)	1	(10)	0	(0)	0	(0)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name / NO. of Animals	400 ppm 10 (%)	600 ppm 10 (%)
thymus	red zone		1 (10)	0 (0)
liver	herniation		0 (0)	0 (0)
uterus	dilated lumen		1 (10)	0 (0)

APPENDIX A 6-3

GROSS FINDINGS : SUMMARY, MOSUE : MALE : ALL ANIMALS

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	120 ppm 10 (%)	180 ppm 10 (%)	270 ppm 10 (%)
spleen	black zone		1 (10)	1 (10)	1 (10)	0 (0)
liver	enlarged		0 (0)	0 (0)	0 (0)	0 (0)
testis	atrophic		1 (10)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	400 ppm 10 (%)	600 ppm 10 (%)
spleen	black zone		1 (10)	2 (20)
liver	enlarged		0 (0)	9 (90)
testis	atrophic		0 (0)	0 (0)

APPENDIX A 6-4

GROSS FINDINGS : SUMMARY, MOSUE : FEMALE : ALL ANIMALS

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	Control 10 (%)	120 ppm 10 (%)	180 ppm 10 (%)	270 ppm 10 (%)
spleen	black zone		1 (10)	0 (0)	2 (20)	0 (0)
liver	enlarged		0 (0)	0 (0)	0 (0)	0 (0)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

GROSS FINDINGS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name NO. of Animals	400 ppm 10 (%)	600 ppm 10 (%)
spleen	black zone		0 (0)	0 (0)
liver	enlarged		0 (0)	10 (100)

APPENDIX A 7-1

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

RAT : MALE : ALL ANIMALS

(2Week STUDY)

STUDY NO. : 0113
ANIMAL : RAT F344
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				120 ppm				180 ppm				270 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Urinary system]																		
kidney	eosinophilic body		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)
[Endocrine system]																		
pituitary	Rathke pouch		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	400 ppm				600 ppm			
		No. of Animals	2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Urinary system]										
kidney	eosinophilic body		0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)
[Endocrine system]										
pituitary	Rathke pouch		1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX A 7-2

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE: MALE:ALL ANIMALS

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : MALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				120 ppm				180 ppm				270 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]																		
lymph node	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
thymus	cyst		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	deposit of melanin		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	hepatocellular hypertrophy:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	400 ppm				600 ppm			
		No. of Animals	2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Hematopoietic system]										
lymph node	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
thymus	cyst		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
spleen	congestion		0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
	deposit of melanin		1 (50)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	hepatocellular hypertrophy:central		0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX A 7-3

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS : SUMMARY

MOUSE: FEMALE :ALL ANIMALS

(2Week STUDY)

STUDY NO. : 0114
ANIMAL : MOUSE BDF1
REPORT TYPE : A1
SEX : FEMALE

HISTOLOGICAL FINDINGS : NON-NEOPLASTIC LESIONS (SUMMARY)
ALL ANIMALS (0- 2W)

Organ	Findings	Group Name	Control				120 ppm				180 ppm				270 ppm			
		No. of Animals	2				2				2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]																		
nasal cavit	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]																		
liver	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	hepatocellular hypertrophy:central		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

Organ	Findings	Group Name	400 ppm				600 ppm			
		No. of Animals	2				2			
			<1> (%)	<2> (%)	<3> (%)	<4> (%)	<1> (%)	<2> (%)	<3> (%)	<4> (%)
[Respiratory system]										
nasal cavit	hemorrhage		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
[Digestive system]										
liver	necrosis:focal		0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	hepatocellular hypertrophy:central		0 (0)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)

<1>:Slight <2>:Moderate <3>:Marked <4>:Severe

APPENDIX A 8-1

IDENTITY OF p - DICHLOROBENZENE

(2Week STUDY)

IDENTITY OF p-DICHLOROBENZENE(TWO-WEEK STUDIES)

Lot No.PDH0373

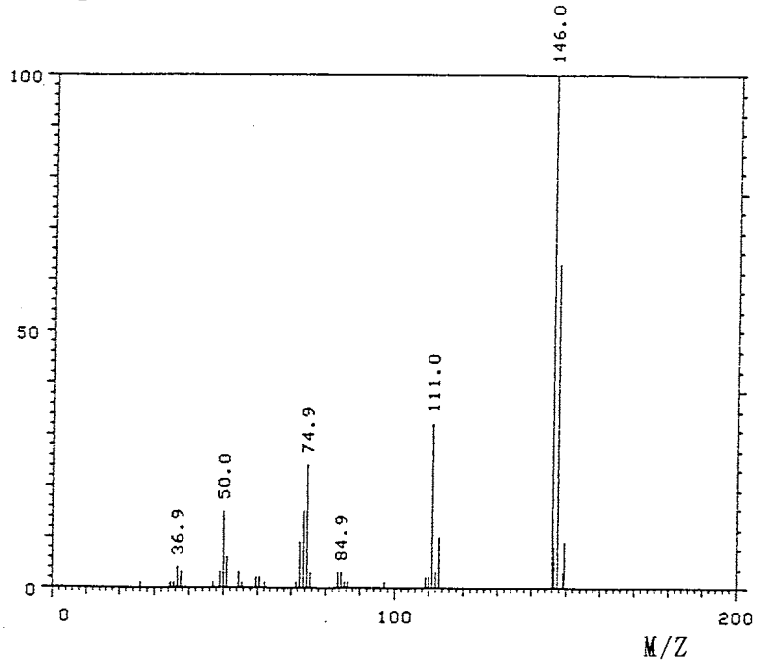
1. Spectral data

(1) Mass Spectrometry

Instrument: Hitachi M-80B Mass Spectrometer

Ionization: EI(Electron Ionization)

Ionization Voltage: 70eV



Mass Spectrum of Test Substance

Result:

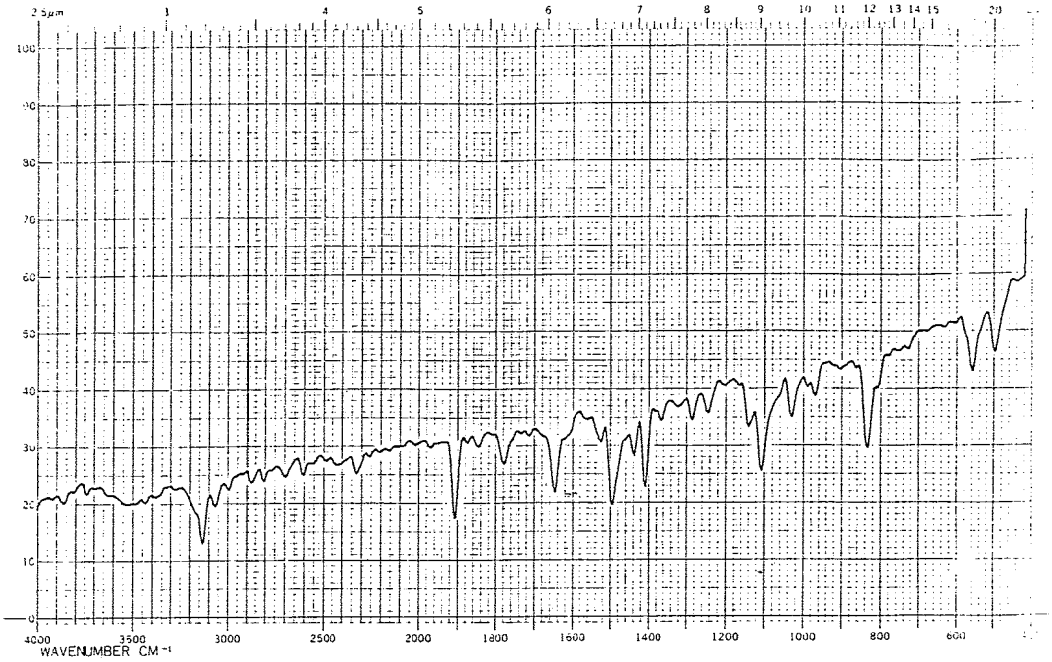
	Molecule Weight
Calculated Value (calculated as Cl=35.0)	146.0
Determined	146.0

(2) Infrared Spectrometry

Instrument : Hitachi 270-30 Infrared Spectrometer

Cell : KBr

Slit : Medium



Infrared Spectrum of Test Substance

Results	Determines Wave Number(cm^{-1})	Literature Values* Wave Number(cm^{-1})
	460～ 520	470～ 510
	540～ 580	530～ 570
	800～ 860	800～ 840
	1010～1050	1000～1050
	1080～1130	1070～1130
	1390～1430	1380～1420
	1460～1510	1450～1500
	1630～1670	1620～1660
	1760～1800	1750～1780
	1890～1930	1870～1920
	3100～3150	3080～3150

(*Sadtler Handbook by Sadtler Research Laboratories, Inc.)

2. Gas Chromatography

Instrument: Hewlett Packard 5890A Gass Chromatograph

Column: Methyl Silicone(0.2mmϕ × 38m)

Column Temperature: 200°C

Flow Rate: 1 ml/min

Detector: FID(Flame Ionization Detector)

Injection Volume: 1 μl

Results: Only major peak

Peak No.	Retention Time(min)	Retention Time Relative to Major Peak	AREA (percent of major peak)
1	2.517(Solvent peak)		
2	2.957	1.00	100

3. Conclusions: The result of the mass spectrum agreed with the calculated value and the infrared spectrum agreed with the literature values. Chromtogram indicated only the major peak without solvent peak. Consequently, the test substance was identified as p-dichlorobenzene.

APPENDIX A 8-2

STABILITY OF p - DICHLOROBENZENE

(2Week STUDY)

STABILITY OF p-DICHLOROBENZENE(TWO-WEEK STUDIES)

Lot No. PDH0373

1. Sample storage: This lot was used from 1989. 3. 9 to 1989. 3. 22. Test substance was stored at 5°C.

2. Infrared Spectrometry

Instrument : Hitachi 270-30 Infrared Spectrometer

Cell : KBr

Slit : Medium

Results

1989. 02. 02(date analyzed) Wave Number(cm^{-1})	1989. 03. 24(date analyzed) Wave Number(cm^{-1})
460～ 520	460～ 520
540～ 580	540～ 580
800～ 860	800～ 860
1010～1050	1010～1050
1080～1130	1080～1130
1390～1430	1390～1430
1460～1510	1460～1510
1630～1670	1630～1670
1760～1800	1760～1800
1890～1930	1890～1930
3100～3150	3100～3150

3. Gas Chromatography

Instrument: Hewlett Packard 5890A Gass Chromatograph

Column: Methyl Silicone(0. 2mmϕ × 38m)

Column Temperature: 200°C

Flow Rate: 1 ml/min

Detector: FID(Flame Ionization Detector)

Injection Volume: 1 μl

Results: Chromatogram indicated one major peak(peak No. 2) and solvent peak(peak No. 1) analyzed at 1989. 2. 2 and one major peak(peak No. 2) and solvent peak(peak No. 1) analyzed at 1989. 3. 24. The new treace impurity peak in the test substance analyzed at 1989. 3. 24 was not detected.

Date	Peak No.	Retention Time(min)	Retention Time Relative to Major Peak	Area (percent of Major peak)
1989. 2. 2	1	2. 517(Solvent peak)		
(date analyzed)	2	2. 957	1. 00	100
1989. 3. 24	1	2. 517(Solvent peak)		
(date analyzed)	2	2. 957	1. 00	100

3. Conclusions: The results indicated that the test sabstance did not change when stored in the dark at 5°C during this period(for about 7 weeks).

APPENDIX A 9-1

CONCENTRATION OF p - DICHLOROBENZENE

(2Week STUDY)

CONCENTRATION OF P-DICHLOROBENZENE IN INHALATION CHAMBER
(RAT : TWO-WEEK STUDY)

Group Name	Concentration(ppm) Mean	±	S.D.
Control	0.0	±	0.0
120ppm	119.3	±	3.3
180ppm	182.0	±	6.3
270ppm	274.4	±	7.5
400ppm	403.8	±	7.4
600ppm	597.4	±	18.4

CONCENTRATION OF P-DICHLOROBENZENE IN INHALATION CHAMBER
(MOUSE : TWO-WEEK STUDY)

Group Name	Concentration(ppm) Mean	±	S.D.
Control	0.0	±	0.0
120ppm	124.3	±	6.1
180ppm	181.2	±	5.6
270ppm	274.1	±	8.6
400ppm	406.7	±	9.9
600ppm	599.9	±	11.6

APPENDIX A 9-2

ENVIRONMENT OF INHALATION CHAMBER

(2Week STUDY)

ENVIRONMENT OF INHALATION CHAMBER

(RAT : TWO-WEEK STUDY)

Group Name	TEMPERATURE(℃) MEAN ± S.D.	HUMIDITY(%) MEAN ± S.D.	VENTILATION RATE(L/min) MEAN ± S.D.	ROOM AIR CHANGE(time/h) MEAN
Control	24.3 ± 0.1	53.7 ± 0.2	266.7 ± 1.1	15.1
120ppm	24.6 ± 0.1	55.2 ± 1.4	267.2 ± 0.4	15.1
180ppm	24.2 ± 0.1	56.9 ± 1.5	267.2 ± 0.6	15.1
270ppm	24.5 ± 0.1	53.4 ± 0.5	266.3 ± 0.7	15.1
400ppm	24.2 ± 0.1	54.0 ± 0.8	265.9 ± 0.8	15.1
600ppm	24.2 ± 0.1	55.4 ± 1.3	266.9 ± 0.6	15.1

ENVIRONMENT OF INHALATION CHAMBER

(MOUSE : TWO-WEEK STUDY)

Group Name	TEMPERATURE(℃) MEAN ± S.D.	HUMIDITY(%) MEAN ± S.D.	VENTILATION RATE(L/min) MEAN ± S.D.	ROOM AIR CHANGE(time/h) MEAN
Control	23.7 ± 0.1	56.4 ± 0.4	130.7 ± 0.3	15.1
120ppm	23.6 ± 0.1	55.3 ± 0.5	131.0 ± 0.3	15.1
180ppm	23.6 ± 0.1	53.8 ± 0.3	130.8 ± 0.3	15.1
270ppm	23.7 ± 0.1	53.0 ± 0.6	130.9 ± 0.3	15.1
400ppm	23.6 ± 0.1	52.7 ± 0.7	130.8 ± 0.3	15.1
600ppm	23.7 ± 0.1	52.5 ± 2.1	126.8 ± 0.3	14.6