酢酸イソプロピルのラットを用いた
吸入による13週間毒性試験報告書

試験番号：0558

TABLES

TABLES

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TABLE 1 CONCENTRATION OF ISOPROPYL ACETATE IN THE INHALATION CHAMBER OF THE 13-WEEK INHALATION STUDY

Group Name	Concentration(ppm) Mean ± S.D.
Control	0.0 ± 0.0
500 ppm	497.3 ± 3.2
1000 ppm	997.8 ± 4.3
2000 ppm	1992.1 ± 8.6
4000 ppm	3984.9 ± 19.1
8000 ppm	7970.6 ± 40.6

TABLE 2 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Week on Study	Control		500 ppm			1000 ppm			2000 ppm			4000 ppm			8000 ppm		
	Av. Wt.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.
	<10>		<10>			<10>			<10>			<10>			<10>		
0	126 (10)	10 / 10	125 (10)	99	10 / 10	126 (10)	100	10 / 10	125 (10)	99	10 / 10	125 (10)	99	10 / 10	126 (10)	100	10 / 10
1	154 (10)	10 / 10	154 (10)	100	10 / 10	157 (10)	102	10 / 10	157 (10)	102	10 / 10	149 (10)	97	10 / 10	125 (10)	81	10 / 10
2	188 (10)	10 / 10	187 (10)	99	10 / 10	188 (10)	100	10 / 10	192 (10)	102	10 / 10	182 (10)	97	10 / 10	147 (10)	78	10 / 10
3	213 (10)	10 / 10	214 (10)	100	10 / 10	214 (10)	100	10 / 10	218 (10)	102	10 / 10	209 (10)	98	10 / 10	163 (10)	77	10 / 10
4	235 (10)	10 / 10	236 (10)	100	10 / 10	235 (10)	100	10 / 10	238 (10)	101	10 / 10	233 (10)	99	10 / 10	178 (10)	76	10 / 10
5	252 (10)	10 / 10	251 (10)	100	10 / 10	252 (10)	100	10 / 10	256 (10)	102	10 / 10	253 (10)	100	10 / 10	192 (10)	76	10 / 10
6	264 (10)	10 / 10	264 (10)	100	10 / 10	265 (10)	100	10 / 10	268 (10)	102	10 / 10	265 (10)	100	10 / 10	201 (10)	76	10 / 10
7	276 (10)	10 / 10	277 (10)	100	10 / 10	279 (10)	101	10 / 10	283 (10)	103	10 / 10	281 (10)	102	10 / 10	211 (10)	76	10 / 10
8	287 (10)	10 / 10	289 (10)	101	10 / 10	288 (10)	100	10 / 10	295 (10)	103	10 / 10	293 (10)	102	10 / 10	217 (10)	76	10 / 10
9	296 (10)	10 / 10	296 (10)	100	10 / 10	298 (10)	101	10 / 10	304 (10)	103	10 / 10	302 (10)	102	10 / 10	226 (10)	76	10 / 10
10	304 (10)	10 / 10	302 (10)	99	10 / 10	305 (10)	100	10 / 10	307 (10)	101	10 / 10	310 (10)	102	10 / 10	239 (10)	79	10 / 10
11	311 (10)	10 / 10	306 (10)	98	10 / 10	309 (10)	99	10 / 10	313 (10)	101	10 / 10	314 (10)	101	10 / 10	237 (10)	76	10 / 10
12	316 (10)	10 / 10	313 (10)	99	10 / 10	315 (10)	100	10 / 10	319 (10)	101	10 / 10	320 (10)	101	10 / 10	244 (10)	77	10 / 10
13	320 (10)	10 / 10	316 (10)	99	10 / 10	320 (10)	100	10 / 10	325 (10)	102	10 / 10	324 (10)	101	10 / 10	249 (10)	78	10 / 10

< > : No. of effective animals, ( ) : No. of measured animals, Av. Wt. : Averaged body weight (Unit : g).

TABLE 3 SURVIVAL ANIMAL NUMBERS AND BODY WEIGHT CHANGES OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Week on Study	Control		500 ppm			1000 ppm			2000 ppm			4000 ppm			8000 ppm		
	Av. Wt.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.	Av. Wt.	% of cont.	No. of Surviv.
	<10>		<10>			<10>			<10>			<10>			<10>		
0	99 (10)	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10	99 (10)	100	10 / 10
1	115 (10)	10 / 10	115 (10)	100	10 / 10	114 (10)	99	10 / 10	115 (10)	100	10 / 10	110 (10)	96	10 / 10	97 (10)	84	10 / 10
2	128 (10)	10 / 10	128 (10)	100	10 / 10	128 (10)	100	10 / 10	128 (10)	100	10 / 10	126 (10)	98	10 / 10	110 (10)	86	10 / 10
3	139 (10)	10 / 10	139 (10)	100	10 / 10	138 (10)	99	10 / 10	136 (10)	98	10 / 10	135 (10)	97	10 / 10	119 (10)	86	10 / 10
4	147 (10)	10 / 10	146 (10)	99	10 / 10	148 (10)	101	10 / 10	147 (10)	100	10 / 10	144 (10)	98	10 / 10	128 (10)	87	10 / 10
5	155 (10)	10 / 10	153 (10)	99	10 / 10	154 (10)	99	10 / 10	152 (10)	98	10 / 10	151 (10)	97	10 / 10	135 (10)	87	10 / 10
6	160 (10)	10 / 10	158 (10)	99	10 / 10	158 (10)	99	10 / 10	158 (10)	99	10 / 10	158 (10)	99	10 / 10	139 (10)	87	10 / 10
7	165 (10)	10 / 10	163 (10)	99	10 / 10	164 (10)	99	10 / 10	165 (10)	100	10 / 10	165 (10)	100	10 / 10	145 (10)	88	10 / 10
8	170 (10)	10 / 10	167 (10)	98	10 / 10	167 (10)	98	10 / 10	169 (10)	99	10 / 10	167 (10)	98	10 / 10	147 (10)	86	10 / 10
9	174 (10)	10 / 10	171 (10)	98	10 / 10	174 (10)	100	10 / 10	173 (10)	99	10 / 10	171 (10)	98	10 / 10	151 (10)	87	10 / 10
10	179 (10)	10 / 10	174 (10)	97	10 / 10	178 (10)	99	10 / 10	175 (10)	98	10 / 10	176 (10)	98	10 / 10	157 (10)	88	10 / 10
11	180 (10)	10 / 10	177 (10)	98	10 / 10	180 (10)	100	10 / 10	179 (10)	99	10 / 10	177 (10)	98	10 / 10	156 (10)	87	10 / 10
12	183 (10)	10 / 10	181 (10)	99	10 / 10	183 (10)	100	10 / 10	179 (10)	98	10 / 10	179 (10)	98	10 / 10	160 (10)	87	10 / 10
13	184 (10)	10 / 10	182 (10)	99	10 / 10	182 (10)	99	10 / 10	180 (10)	98	10 / 10	179 (10)	97	10 / 10	164 (10)	89	10 / 10

< > : No. of effective animals, ( ) : No. of measured animals, Av. Wt. : Averaged body weight (Unit : g).

TABLE 4 FOOD CONSUMPTION CHANGES OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Week on Study	Control		500 ppm			1000 ppm			2000 ppm			4000 ppm			8000 ppm		
	Av. FC.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.
	<10>		<10>			<10>			<10>			<10>			<10>		
1	13.8 (10)	10 / 10	13.9 (10)	101	10 / 10	14.3 (10)	104	10 / 10	14.3 (10)	104	10 / 10	12.7 (10)	92	10 / 10	8.2 (10)	59	10 / 10
2	15.6 (10)	10 / 10	15.6 (10)	100	10 / 10	15.7 (10)	101	10 / 10	16.1 (10)	103	10 / 10	14.7 (10)	94	10 / 10	12.0 (10)	77	10 / 10
3	16.6 (10)	10 / 10	16.9 (10)	102	10 / 10	16.9 (10)	102	10 / 10	17.2 (10)	104	10 / 10	15.7 (10)	95	10 / 10	12.9 (10)	78	10 / 10
4	17.1 (10)	10 / 10	17.2 (10)	101	10 / 10	16.5 (10)	96	10 / 10	17.0 (10)	99	10 / 10	16.3 (10)	95	10 / 10	13.6 (10)	80	10 / 10
5	16.5 (10)	10 / 10	16.9 (10)	102	10 / 10	16.7 (10)	101	10 / 10	17.2 (10)	104	10 / 10	16.8 (10)	102	10 / 10	14.6 (10)	88	10 / 10
6	16.0 (10)	10 / 10	16.5 (10)	103	10 / 10	16.4 (10)	103	10 / 10	16.6 (10)	104	10 / 10	16.4 (10)	103	10 / 10	14.1 (10)	88	10 / 10
7	16.6 (10)	10 / 10	17.0 (10)	102	10 / 10	17.1 (10)	103	10 / 10	17.5 (10)	105	10 / 10	17.5 (10)	105	10 / 10	15.3 (10)	92	10 / 10
8	16.6 (10)	10 / 10	17.1 (10)	103	10 / 10	17.4 (10)	105	10 / 10	17.7 (10)	107	10 / 10	17.3 (10)	104	10 / 10	15.0 (10)	90	10 / 10
9	16.9 (10)	10 / 10	17.0 (10)	101	10 / 10	17.0 (10)	101	10 / 10	17.4 (10)	103	10 / 10	16.9 (10)	100	10 / 10	15.2 (10)	90	10 / 10
10	16.3 (10)	10 / 10	16.6 (10)	102	10 / 10	16.2 (10)	99	10 / 10	16.5 (10)	101	10 / 10	17.3 (10)	106	10 / 10	16.0 (10)	98	10 / 10
11	16.1 (10)	10 / 10	15.5 (10)	96	10 / 10	15.9 (10)	99	10 / 10	16.2 (10)	101	10 / 10	15.6 (10)	97	10 / 10	13.9 (10)	86	10 / 10
12	16.0 (10)	10 / 10	15.7 (10)	98	10 / 10	15.6 (10)	98	10 / 10	15.9 (10)	99	10 / 10	16.2 (10)	101	10 / 10	15.2 (10)	95	10 / 10
13	15.4 (10)	10 / 10	15.4 (10)	100	10 / 10	15.8 (10)	103	10 / 10	15.6 (10)	101	10 / 10	15.8 (10)	103	10 / 10	15.5 (10)	101	10 / 10

< > : No. of effective animals, ( ) : No. of measured animals, Av. FC. : Averaged food consumption (Unit : g).

TABLE 5 FOOD CONSUMPTION CHANGES OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Week on Study	Control		500 ppm			1000 ppm			2000 ppm			4000 ppm			8000 ppm		
	Av. FC.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.	Av. FC.	% of cont.	No. of Surviv.
	<10>		<10>			<10>			<10>			<10>			<10>		
1	10.5 (10)	10 / 10	10.5 (10)	100	10 / 10	10.8 (10)	103	10 / 10	10.3 (10)	98	10 / 10	9.8 (10)	93	10 / 10	7.0 (10)	67	10 / 10
2	11.0 (10)	10 / 10	10.9 (10)	99	10 / 10	11.1 (10)	101	10 / 10	11.0 (10)	100	10 / 10	10.3 (10)	94	10 / 10	9.2 (10)	84	10 / 10
3	11.3 (10)	10 / 10	11.2 (10)	99	10 / 10	11.3 (10)	100	10 / 10	10.7 (10)	95	10 / 10	10.6 (10)	94	10 / 10	9.9 (10)	88	10 / 10
4	11.5 (10)	10 / 10	11.1 (10)	97	10 / 10	11.4 (10)	99	10 / 10	10.7 (10)	93	10 / 10	10.4 (10)	90	10 / 10	10.2 (10)	89	10 / 10
5	11.4 (10)	10 / 10	11.1 (10)	97	10 / 10	11.3 (10)	99	10 / 10	10.9 (10)	96	10 / 10	10.7 (10)	94	10 / 10	10.4 (10)	91	10 / 10
6	11.0 (10)	10 / 10	10.4 (10)	95	10 / 10	10.9 (10)	99	10 / 10	10.8 (10)	98	10 / 10	10.9 (10)	99	10 / 10	10.2 (10)	93	10 / 10
7	11.2 (10)	10 / 10	10.8 (10)	96	10 / 10	11.3 (10)	101	10 / 10	11.1 (10)	99	10 / 10	10.8 (10)	96	10 / 10	10.8 (10)	96	10 / 10
8	11.1 (10)	10 / 10	10.7 (10)	96	10 / 10	11.2 (10)	101	10 / 10	11.2 (10)	101	10 / 10	11.0 (10)	99	10 / 10	11.0 (10)	99	10 / 10
9	11.6 (10)	10 / 10	10.9 (10)	94	10 / 10	11.5 (10)	99	10 / 10	11.0 (10)	95	10 / 10	10.8 (10)	93	10 / 10	10.9 (10)	94	10 / 10
10	11.0 (10)	10 / 10	10.7 (10)	97	10 / 10	11.1 (10)	101	10 / 10	10.9 (10)	99	10 / 10	10.9 (10)	99	10 / 10	11.7 (10)	106	10 / 10
11	10.8 (10)	10 / 10	10.5 (10)	97	10 / 10	11.1 (10)	103	10 / 10	10.9 (10)	101	10 / 10	10.7 (10)	99	10 / 10	10.3 (10)	95	10 / 10
12	10.8 (10)	10 / 10	10.6 (10)	98	10 / 10	10.9 (10)	101	10 / 10	10.3 (10)	95	10 / 10	10.1 (10)	94	10 / 10	10.8 (10)	100	10 / 10
13	10.8 (10)	10 / 10	10.3 (10)	95	10 / 10	10.6 (10)	98	10 / 10	10.3 (10)	95	10 / 10	10.0 (10)	93	10 / 10	10.9 (10)	101	10 / 10

< > : No. of effective animals, ( ) : No. of measured animals, Av. FC. : Averaged food consumption (Unit : g).

TABLE 6 HEMATOLOGY OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animals	10	10	10	10	10	10
HEMOGLOBIN (g/dL)	16.1 ± 0.3	16.1 ± 0.2	16.1 ± 0.2	16.0 ± 0.3	16.1 ± 0.4	16.4 ± 0.3 *
MCV (fL)	49.0 ± 0.3	48.9 ± 0.5	48.8 ± 0.3	49.1 ± 0.4	49.6 ± 0.6 **	50.5 ± 0.3 **
MCH (pg)	16.8 ± 0.2	16.7 ± 0.2	16.6 ± 0.2	16.8 ± 0.1	17.1 ± 0.5	17.3 ± 0.3 **
RETICULOCYTE (%)	2.2 ± 0.1	2.0 ± 0.2	1.9 ± 0.2 **	1.9 ± 0.1 **	1.9 ± 0.1 **	1.5 ± 0.2 **
APTT (sec)	23.0 ± 1.6	22.7 ± 1.0	22.8 ± 1.3	21.9 ± 1.7	21.4 ± 1.6 *	18.5 ± 0.8 **
Differential WBC (%)						
N-SEG	21 ± 3	22 ± 3	22 ± 6	21 ± 4	23 ± 4	35 ± 3 **
LYMPHO	74 ± 4	74 ± 4	74 ± 5	74 ± 5	73 ± 3	60 ± 5 **

Mean ± S.D.

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

TABLE 7 HEMATOLOGY OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animals	10	10	10	10	10	10
RED BLOOD CELL ($10^6/\mu$ L)	8.66 ± 0.19	8.79 ± 0.17	8.86 ± 0.12	8.95 ± 0.18 **	8.83 ± 0.16	9.41 ± 0.24 **
HEMOGLOBIN (g/dL)	15.8 ± 0.3	16.0 ± 0.3	16.1 ± 0.3	16.3 ± 0.4 **	16.0 ± 0.3	16.5 ± 0.5 **
HEMATOCRIT (%)	44.8 ± 0.9	45.5 ± 0.9	45.7 ± 0.6	46.3 ± 1.0 **	45.5 ± 0.9	47.7 ± 1.4 **
MCV (fL)	51.7 ± 0.5	51.7 ± 0.2	51.6 ± 0.3	51.7 ± 0.4	51.5 ± 0.3	50.7 ± 0.5 **
MCH (pg)	18.2 ± 0.2	18.3 ± 0.2	18.2 ± 0.1	18.2 ± 0.2	18.2 ± 0.2	17.6 ± 0.3 **
MCHC (g/dL)	35.2 ± 0.2	35.3 ± 0.3	35.3 ± 0.2	35.3 ± 0.4	35.2 ± 0.3	34.7 ± 0.3 **
RETICULOCYTE (%)	2.2 ± 0.3	2.1 ± 0.1	1.8 ± 0.2	1.8 ± 0.2	1.6 ± 0.2 **	1.3 ± 0.4 **
Differential WBC (%)						
N-SEG	21 ± 5	22 ± 4	21 ± 4	20 ± 3	24 ± 6	34 ± 4 **
LYMPHO	74 ± 5	74 ± 3	75 ± 4	75 ± 3	72 ± 4	61 ± 3 **

Mean ± S.D.

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

TABLE 8 BIOCHEMISTRY OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animals	10	10	10	10	10	10
GLUCOSE (mg/dL)	197 ± 12	194 ± 8	195 ± 12	188 ± 15	183 ± 9	165 ± 17 **
T-CHOLESTEROL (mg/dL)	66 ± 6	64 ± 6	66 ± 5	68 ± 4	80 ± 6 **	91 ± 5 **
TRIGLYCERIDE (mg/dL)	61 ± 16	57 ± 9	65 ± 24	52 ± 22	43 ± 11	28 ± 9 **
PHOSPHOLIPID (mg/dL)	114 ± 10	112 ± 9	116 ± 8	114 ± 8	124 ± 9	138 ± 7 **
UREA NITOROGEN (mg/dL)	18.8 ± 0.5	19.2 ± 1.0	19.9 ± 1.2	21.2 ± 1.6 **	20.2 ± 1.4 *	18.5 ± 1.6
POTASSIUM (mEq/L)	3.4 ± 0.2	3.3 ± 0.3	3.5 ± 0.2	3.4 ± 0.3	3.4 ± 0.3	3.9 ± 0.4 **
INORGANIC PHOSPHORUS (mg/dL)	5.5 ± 0.6	5.5 ± 0.6	5.5 ± 0.5	5.7 ± 0.6	5.7 ± 0.4	6.3 ± 0.5 **

Mean ± S.D.

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

TABLE 9 BIOCHEMISTRY OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animals	10	10	10	10	10	10
A/G RATIO	1.3 ± 0.1	1.3 ± 0.0	1.3 ± 0.1	1.3 ± 0.1	1.2 ± 0.1 **	1.2 ± 0.1 **
T-CHOLESTEROL (mg/dL)	78 ± 9	78 ± 5	80 ± 4	83 ± 7	85 ± 7	96 ± 7 **
ALT (IU/L)	38 ± 14	36 ± 5	37 ± 6	40 ± 10	37 ± 10	51 ± 6 **
ALP (IU/L)	195 ± 24	197 ± 19	188 ± 22	191 ± 19	188 ± 25	267 ± 42 **
UREA NITOROGEN (mg/dL)	19.9 ± 1.7	18.7 ± 1.3	19.6 ± 1.4	20.3 ± 1.1	19.5 ± 1.5	17.7 ± 1.4 **
POTASSIUM (mEq/L)	3.5 ± 0.4	3.3 ± 0.3	3.5 ± 0.2	3.4 ± 0.3	3.6 ± 0.3	3.8 ± 0.2 *

Mean ± S.D.

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

TABLE 10 URINALYSIS OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name		Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animals		10	10	10	10	10	10
	Grade						
Protein	−	0	0	0	0	0	0
	±	3	3	3	4	1	0
	+	3	4	6	3	7	9
	2+	4	3	1	2	2	1
	3+	0	0	0	1	0	0
	4+	0	0	0	0	0	0
	Chi square test						*

Significant difference: * : p≦0.05 ** : p≦0.01

TABLE 11 URINALYSIS OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name		Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animals		10	10	10	10	10	10
	Grade						
Ketone body	−	10	10	9	10	8	6
	±	0	0	1	0	2	4
	+	0	0	0	0	0	0
	2+	0	0	0	0	0	0
	3+	0	0	0	0	0	0
	4+	0	0	0	0	0	0
	Chi square test						*

Significant difference: * : p≦0.05 ** : p≦0.01

TABLE 12 ORGAN WEIGHTS OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animal	10	10	10	10	10	10
Body weight (g)	301 ± 15	295 ± 14	297 ± 16	302 ± 14	303 ± 18	230 ± 11 **
Thymus (g)	0.249 ± 0.051	0.238 ± 0.023	0.244 ± 0.033	0.241 ± 0.022	0.226 ± 0.025	0.144 ± 0.020 **
Thymus (%)	0.083 ± 0.015	0.081 ± 0.009	0.082 ± 0.008	0.080 ± 0.007	0.074 ± 0.007	0.063 ± 0.007 **
Adrenals (g)	0.049 ± 0.004	0.049 ± 0.003	0.051 ± 0.005	0.051 ± 0.003	0.052 ± 0.005	0.060 ± 0.004 **
Adrenals (%)	0.016 ± 0.002	0.017 ± 0.001	0.017 ± 0.002	0.017 ± 0.001	0.017 ± 0.001	0.026 ± 0.002 **
Testes (g)	3.274 ± 0.318	3.167 ± 0.102	3.191 ± 0.090	3.204 ± 0.091	3.255 ± 0.099	2.607 ± 0.483 **
Testes (%)	1.088 ± 0.073	1.074 ± 0.046	1.076 ± 0.057	1.062 ± 0.045	1.078 ± 0.068	1.138 ± 0.217
Heart (g)	0.915 ± 0.054	0.907 ± 0.047	0.907 ± 0.039	0.918 ± 0.036	0.928 ± 0.048	0.849 ± 0.051 *
Heart (%)	0.304 ± 0.015	0.307 ± 0.007	0.305 ± 0.011	0.304 ± 0.013	0.307 ± 0.014	0.369 ± 0.019 **
Lungs (g)	0.971 ± 0.069	0.960 ± 0.062	0.970 ± 0.039	0.984 ± 0.050	0.999 ± 0.040	0.904 ± 0.040 *
Lungs (%)	0.323 ± 0.011	0.325 ± 0.014	0.327 ± 0.007	0.326 ± 0.011	0.330 ± 0.018	0.394 ± 0.011 **
Kidneys (g)	1.798 ± 0.075	1.810 ± 0.117	1.820 ± 0.067	1.844 ± 0.050	1.897 ± 0.096	1.737 ± 0.113
Kidneys (%)	0.599 ± 0.023	0.613 ± 0.023	0.613 ± 0.015	0.611 ± 0.016	0.626 ± 0.021 *	0.755 ± 0.030 **
Spleen (g)	0.562 ± 0.042	0.557 ± 0.027	0.565 ± 0.039	0.581 ± 0.033	0.572 ± 0.038	0.390 ± 0.036 **
Spleen (%)	0.187 ± 0.010	0.189 ± 0.008	0.190 ± 0.005	0.192 ± 0.009	0.189 ± 0.010	0.170 ± 0.014 **
Liver (g)	7.495 ± 0.468	7.395 ± 0.431	7.578 ± 0.489	7.597 ± 0.416	8.059 ± 0.644	7.513 ± 0.591
Liver (%)	2.493 ± 0.072	2.503 ± 0.074	2.548 ± 0.046	2.515 ± 0.068	2.658 ± 0.097 **	3.267 ± 0.189 **
Brain (g)	1.921 ± 0.028	1.907 ± 0.034	1.930 ± 0.028	1.934 ± 0.026	1.890 ± 0.033	1.753 ± 0.034 **
Brain (%)	0.640 ± 0.034	0.647 ± 0.028	0.650 ± 0.030	0.641 ± 0.029	0.625 ± 0.029	0.764 ± 0.030 **

Mean ± S.D.
Significant difference: * : $p \leqq 0.05$ ** : $p \leqq 0.01$ Test of Dunnett

TABLE 13 ORGAN WEIGHTS OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control	500 ppm	1000 ppm	2000 ppm	4000 ppm	8000 ppm
No. of examined animal	10	10	10	10	10	10
Body weight (g)	170 ± 9	167 ± 8	169 ± 9	167 ± 4	165 ± 6	150 ± 8 **
Thymus (g)	0.194 ± 0.026	0.191 ± 0.018	0.199 ± 0.025	0.179 ± 0.016	0.172 ± 0.017	0.136 ± 0.021 **
Thymus (%)	0.114 ± 0.015	0.114 ± 0.009	0.118 ± 0.013	0.107 ± 0.009	0.104 ± 0.011	0.090 ± 0.012 **
Adrenals (g)	0.057 ± 0.005	0.053 ± 0.003	0.058 ± 0.005	0.053 ± 0.004	0.056 ± 0.005	0.066 ± 0.005 **
Adrenals (%)	0.034 ± 0.002	0.032 ± 0.002	0.035 ± 0.004	0.032 ± 0.002	0.034 ± 0.004	0.044 ± 0.004 **
Ovaries (g)	0.099 ± 0.015	0.089 ± 0.009	0.099 ± 0.004	0.086 ± 0.008	0.094 ± 0.007	0.074 ± 0.014 **
Ovaries (%)	0.058 ± 0.011	0.053 ± 0.004	0.059 ± 0.005	0.052 ± 0.004	0.057 ± 0.004	0.049 ± 0.008
Heart (g)	0.604 ± 0.033	0.604 ± 0.026	0.628 ± 0.029	0.600 ± 0.020	0.623 ± 0.041	0.615 ± 0.040
Heart (%)	0.355 ± 0.015	0.361 ± 0.014	0.372 ± 0.015	0.359 ± 0.014	0.377 ± 0.017 *	0.411 ± 0.029 **
Lungs (g)	0.722 ± 0.045	0.727 ± 0.026	0.745 ± 0.039	0.720 ± 0.018	0.732 ± 0.025	0.703 ± 0.035
Lungs (%)	0.425 ± 0.022	0.435 ± 0.020	0.442 ± 0.036	0.431 ± 0.016	0.444 ± 0.021	0.469 ± 0.012 **
Kidneys (g)	1.138 ± 0.047	1.149 ± 0.046	1.153 ± 0.061	1.134 ± 0.029	1.174 ± 0.031	1.230 ± 0.046 **
Kidneys (%)	0.669 ± 0.024	0.687 ± 0.020	0.683 ± 0.029	0.678 ± 0.012	0.712 ± 0.021 *	0.823 ± 0.038 **
Spleen (g)	0.384 ± 0.027	0.378 ± 0.030	0.376 ± 0.022	0.364 ± 0.015	0.358 ± 0.017	0.272 ± 0.023 **
Spleen (%)	0.226 ± 0.015	0.226 ± 0.016	0.222 ± 0.011	0.218 ± 0.008	0.217 ± 0.010	0.182 ± 0.017 **
Liver (g)	4.059 ± 0.222	4.014 ± 0.250	4.084 ± 0.201	4.003 ± 0.154	4.171 ± 0.133	4.944 ± 0.396 **
Liver (%)	2.388 ± 0.088	2.399 ± 0.074	2.417 ± 0.090	2.394 ± 0.083	2.528 ± 0.084 *	3.301 ± 0.205 **
Brain (g)	1.801 ± 0.028	1.793 ± 0.024	1.797 ± 0.020	1.784 ± 0.028	1.771 ± 0.020	1.635 ± 0.034 **
Brain (%)	1.061 ± 0.052	1.073 ± 0.047	1.066 ± 0.058	1.068 ± 0.033	1.074 ± 0.045	1.094 ± 0.042

Mean ± S.D.
Significant difference: * : $p \leqq 0.05$ ** : $p \leqq 0.01$ Test of Dunnett

TABLE 14 INCIDENCES OF SELECTED LESIONS OF MALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control				500 ppm				1000 ppm				2000 ppm				4000 ppm				8000 ppm				
Number of examined animals	10				10				10				10				10				10				
Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
liver	<10>				<10>				<10>				<10>				<10>				<10>				
hepatocellular hypertrophy:central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	**
stomach	<10>				<10>				<10>				<10>				<10>				<10>				
hyperplasia:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	*
erosion:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
testis	<10>				<10>				<10>				<10>				<10>				<10>				
germ cell necrosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	**
epididymis	<10>				<10>				<10>				<10>				<10>				<10>				
decreased:sperma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< > : Number of animals examined at the site
Significant difference : * : p≦ 0.05 ** : p≦ 0.01 Test of Chi Square

TABLE 15 INCIDENCES OF SELECTED LESIONS OF FEMALE RATS IN THE 13-WEEK INHALATION STUDY OF ISOPROPYL ACETATE

Group Name	Control				500 ppm				1000 ppm				2000 ppm				4000 ppm				8000 ppm				
Number of examined animals	10				10				10				10				10				10				
Grade	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
liver	<10>				<10>				<10>				<10>				<10>				<10>				
hepatocellular hypertrophy:central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	*
stomach	<10>				<10>				<10>				<10>				<10>				<10>				
hyperplasia:forestomach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	

Grade 1 : Slight 2 : Moderate 3 : Marked 4 : Severe
< > : Number of animals examined at the site
Significant difference : * : p≦ 0.05 ** : p≦ 0.01 Test of Chi Square