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May 17, 1994

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FYI-94-000917
INIT 06/08/94

84940000017

Dr. John D. Walker TS-792
Director
TSCA Interagency Testing Committee
401 M Street, SW
Washington, DC 20460

Dear Dr. Walker:

The Chemical Manufacturers Association makes public all final reports developed from research projects that it administers. The following reports, recently completed, are enclosed:

- "Immunohistochemical Evaluation of Alpha 2u-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study"
- "Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats"

These reports do not include confidential information.

If you have any questions, please call Ms. Cecilia W. Spearing of my staff at 202/887-1305.

Sincerely,

Langley A. Spurlock, Ph.D., CAE
Vice President, CHEMSTAR

Enclosures

RECEIVED 7/11/94

2501 M Street, NW, Washington, DC 20037 Telephone 202-887-1100 Fax 202-887-1237

Responsible Care® A Public Commitment

UNION CARBIDE

BUSHY RUN RESEARCH CENTER

6702 Mellon Road, Export, Pennsylvania 15632-8902

Telephone (412) 733-5200
Telecopier (412) 733-4804

STUDY TITLE

Immunohistochemical Evaluation of Alpha$_{2u}$-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

TEST SUBSTANCE

Isopropanol

DATA REQUIREMENT

None Applicable

AUTHORS

E. H. Fowler and C. Martin

STUDY COMPLETION DATE

April 29, 1994

PERFORMING LABORATORY

Bushy Run Research Center (BRRC)
Union Carbide Corporation (UCC)
6702 Mellon Road
Export, PA 15632-8902

LABORATORY PROJECT ID

93N1229

SPONSOR

Isopropanol Panel
Chemical Manufacturers Association (CMA)
2501 M Street, NW
Washington, DC 20037

Immunohistochemical Evaluation of Alpha$_{2u}$-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

The portions of this study conducted by BRRC meet the requirements of Toxic Substances Control Act (TSCA) Good Laboratory Practice Standards, 40 CFR Part 792, with one exception. This exception is that there is no documentation for the last set of slides cut for the repeat staining on the male rats.

Study Director: Edward H. Fowler 4-29-94

Edward H. Fowler, DVM, Ph.D. Date
Diplomate, ACVP

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Immunohistochemical Evaluation of $Alpha_{2u}$-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

SUMMARY

Kidney sections, prepared from paraffin blocks of kidney tissues obtained following a 9-day vapor inhalation study with isopropanol (CAS No. 67-63-0), were sent to Dr. James A. Swenberg's laboratory at the University of North Carolina for immunohistochemical staining with $alpha_{2u}$-globulin. The sections examined included 5/sex from the control and 5000 ppm exposure groups and 5 males from the 10,000 ppm exposure group.

There were no substantive differences noted between the exposure groups for the male rats in either intensity or distribution of the $alpha_{2u}$-globulin reactivity. The females did not have any $alpha_{2u}$-globulin positive reaction in the kidney sections.

OBJECTIVE

The objective of this study was to evaluate the kidneys from a previous 9-day vapor inhalation study with isopropanol using an immunohistochemical procedure to identify $alpha_{2u}$-globulin.

BACKGROUND INFORMATION

A previous 9-day inhalation study was conducted in Fischer 344 rats (BRRC Report 53-514). In this study, animals were exposed to isopropanol vapor (CAS No. 67-63-0).

MATERIALS AND METHODS

The protocol detailing the design and conduct of this study is included in Appendix 3.

Anatomic Pathology Evaluations

At least two slides/animal were prepared from paraffin blocks of 25 kidneys from the 9-day study. Slides were prepared from 5 animals/sex for the control and 5000 ppm groups and 5 males from the 10,000 ppm exposure group. The kidneys were sectioned at approximately 5 microns and mounted on Fisher Superfrost® Plus Slides. The slides were mailed to Dr. James A. Swenberg at the Laboratory of Molecular Carcinogenesis and Mutagenesis, Department of Environmental Sciences and Engineering, The University of North Carolina at Chapel Hill, for immunostaining. The staining protocol (including an amendment) used by Dr. Swenberg is presented in Appendix 2.

All stained slides were returned to BRRC for evaluation and reporting.

RETENTION OF RECORDS

All raw data, documentation, the protocol and any amendments, specimens and a copy of the final report generated as a result of this study will be retained in the BRRC Archives. All tissue blocks and slides will be retained in the BRRC archives with the isopropanol 9-day vapor inhalation study raw data.

RESULTS AND DISCUSSION

Table 1 lists the results of the evaluation for $alpha_{2u}$-globulin positive material in the kidneys of the male rats. Table 2 lists the results of the evaluation for $alpha_{2u}$-globulin positive material in the kidneys of the female rats.

The slides that were originally submitted for the $alpha_{2u}$-globulin immunohistochemistry did not come out well due to a problem with the equipment, and other slides had to be stained by hand (males only). The final product of the immunohistochemistry, the hand-stained slides, was reevaluated. Changes were made in the computer only when the results from evaluating the hand stained slides differed from the results obtained from the machine stained slides. For approximately 50% of the animals the diagnosis was

revised following this final evaluation. As can be seen in Table 1, there was no apparent increase in the $alpha_{2u}$-globulin in the kidneys from the exposed male rats compared with the controls.

There was no evidence of reactivity to $alpha_{2u}$-globulin in the kidneys of the female rats as evidenced by the results in Table 2.

CONCLUSIONS

No substantive differences in the intensity or distribution of $alpha_{2u}$-globulin were found in the kidneys of the isopropanol-exposed male rats compared with the controls. There was no $alpha_{2u}$-globulin reactivity found in the female rat kidneys.

REVIEW AND APPROVAL

Study Director: Edward H. Fowler 4-29-94
Edward H. Fowler, DVM, Ph.D. Date
Diplomate, ACVP

Director: 4/29/94
John P. Van Miller, Ph.D., DABT Date

KEY PERSONNEL

Study Director: E. H. Fowler

Supervisor: M. A. McGee

Consultant: J. A. Swenberg

Additional personnel are listed in the raw data.

REFERENCE

Burleigh-Flayer, H. D., Gill, M. W., and Kintigh, W. J. (1990). Isopropanol Nine-Day Vapor Inhalation Study on Rats and Mice. BRRC Report 53-514, Bushy Run Research Center, Union Carbide Corporation, Export, PA.

ANATPATH\REPORTS\3N1229
APRIL 29, 1994

TABLE 1
IMMUNOHISTOCHEMICAL EVALUATION OF $ALPHA_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
SUMMARY OF MICROSCOPIC DIAGNOSES BY GRADE (KIDNEYS)
ALL ANIMALS COMBINED
MALES

GROUP:		1	2	3
Number of animals included		5	5	5
KIDNEYS				
Number of Tissues Examined		5	5	5
No. With Microscopic Diagnoses		5	5	5
$ALPHA_{2u}$-GLOBULIN POSITIVE		5	5	5
	minimal	-	-	1
	mild	1	1	3
	moderate	4	4	1

Group Legend: 1 is 0 PPM, 2 is 5000 PPM, 3 is 10,000 PPM

TABLE 2
IMMUNOHISTOCHEMICAL EVALUATION OF $ALPHA_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
SUMMARY OF MICROSCOPIC DIAGNOSES (KIDNEYS)
ALL ANIMALS COMBINED
FEMALES

GROUP:	1	2
Number of animals included	5	5
KIDNEYS		
Number of Tissues Examined	5	5
No. With Microscopic Diagnoses	5	5
$ALPHA_{2u}$-GLOBULIN NEGATIVE	5	5

Group Legend: 1 is 0 PPM, 2 is 5000 PPM

Quality Assurance Unit Study Inspection Summary

Test Substance: Isopropanol

Study: Immunohistochemical Evaluation of Alpha2u-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

Study Director: Edward H. Fowler, DVM, Ph.D., DACVP

The Quality Assurance Unit of BRRC conducted the inspections listed below and reported the results to the study director and management on the dates indicated. It is the practice of this Quality Assurance Unit to report the results of each inspection to both the study director and management.

Inspection Date	Type	Date QAU Report Issued To Study Director	Date QAU Report Issued To Management
4-22-93 to 4-26-93	Protocol	4-30-93	5-21-93
5-20-93	Subcontract Protocol Immunohistochem.	5-20-93	5-21-93
12-2-93	Protocol Amendment #1 Immunohistochem.	12-2-93	12-15-93
4-6-94 to 4-7-94	Raw Data, Report	4-7-94	4-27-94
4-27-94	Archives	4-27-94	4-27-94

Linda J. Calisti 4/28/94

Linda J. Calisti, Manager Date
Good Laboratory Practices/Quality Assurance

Immunohistochemical Evaluation of $Alpha_{2u}$-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

Individual Necropsy Observations and/or Microscopic Diagnoses

(8 Pages)

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TABLE 1
IMMUNOHISTOCHEMICAL EVALUATION OF ALPHA$_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM

ANIMAL ID: 25278 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate	
	Comment: MOST ACTIVITY AT CORTICAL SURFACE, MULTIFOCAL IN DEEPER CORTEX, VERY FINE GRANULES IN CELLS LUMINAL BORDERS AND LUMINA REACT MOST INTENSELY A FEW LARGER INTRACELLULAR GRANULES AT CORTICAL SURFACE	

ANIMAL ID: 25288 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate	
	Comment: REPEAT PROCEDURE REEVALUATED	

ANIMAL ID: 25295 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate	
	Comment: REPEAT PROCEDURE REEVALUATED FINE GRANULES IN CORTICAL SURFACE CELLS AND IN CORTICAL RAYS	

ANIMAL ID: 25302 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate	
	Comment: SEVERAL MODERATE REACTING AREAS DEEPER IN CORTEX MOST GRANULES SMALL, A FEW LARGER ONES IN CYTOPLASM	

ANIMAL ID: 25303 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, mild	
	Comment: REPEAT PROCEDURE REEVALUATED	

TABLE 1
IMMUNOHISTOCHEMICAL EVALUATION OF ALPHA$_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 5000 PPM

ANIMAL ID: 25276 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate		
Comment: SOME LARGER GRANULES IN TUBULE CELLS IN DEEPER CORTEX		

ANIMAL ID: 25283 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, mild		
Comment: SEVERAL AREAS OF INTENSE REACTION AT CORTICAL SURFACE MINIMAL REACTION IN DEEPER CORTEX, SMALL GRANULES		

ANIMAL ID: 25290 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate		
Comment: REPEAT PROCEDURE REEVALUATED MARKED ACTIVITY AT CORTICAL SURFACE		

ANIMAL ID: 25299 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate		
Comment: REPEAT PROCEDURE REEVALUATED MARKED ACTIVITY AT CORTICAL SURFACE LESS ACTIVITY IN DEEPER CORTEX		

ANIMAL ID: 25301 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, moderate		
Comment: SOME MODERATE SIZED GRANULES IN DEEPER CORTEX SEVERAL INTENSE REACTING AREAS ON SURFACE OF CORTEX		

TABLE 1
IMMUNOHISTOCHEMICAL EVALUATION OF ALPHA$_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 10,000 PPM

ANIMAL ID: 25279 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, minimal	
	Comment: ONLY VERY LITTLE ACTIVITY EVEN AT CORTICAL SURFACE ACTIVITY PRESENT AS SMALL GRANULES	

ANIMAL ID: 25286 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, mild	
	Comment: 3 STAINS PERFORMED AND EVALUATED ANTIGEN RETRIEVAL REVEALED GREATER REACTION A FEW LARGER POSITIVE DROPLETS IN THE CORTICAL CELLS	

ANIMAL ID: 25300 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, mild	

ANIMAL ID: 25305 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN POSITIVE, multifocal, mild	

TABLE 1
IMMUNOHISTOCHEMICAL EVALUATION OF $ALPHA_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 10,000 PPM

ANIMAL ID: 25306 DATE OF DEATH:15-DEC-89 MALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	$ALPHA_{2u}$-GLOBULIN POSITIVE, multifocal, moderate	
	Comment: SOME INTENSELY STAINED CELLS IN CORTEX 2 ADDITIONAL SLIDES STAINED AND EVALUATED ANTIGEN RETRIEVAL REVEALED GREATER REACTION	

TABLE 2
IMMUNOHISTOCHEMICAL EVALUATION OF ALPHA$_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 0 PPM

ANIMAL ID: 25343 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25318 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25333 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25334 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25339 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

TABLE 2
IMMUNOHISTOCHEMICAL EVALUATION OF ALPHA$_{2u}$-GLOBULIN IN KIDNEYS OF FISCHER 344 RATS FROM THE ISOPROPANOL NINE-DAY VAPOR INHALATION STUDY
INDIVIDUAL NECROPSY OBSERVATIONS AND/OR MICROSCOPIC DIAGNOSES

GROUP: 5000 PPM

ANIMAL ID: 25311 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25316 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25321 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25340 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

ANIMAL ID: 25341 DATE OF DEATH:15-DEC-89 FEMALE SCHEDULED SACRIFICE

TISSUE/ANATOMIC SITE	DIAGNOSES	GROSS/MICRO CORRELATE
KIDNEYS (microscopic)		
	ALPHA$_{2u}$-GLOBULIN NEGATIVE, present	

Immunohistochemical Evaluation of $Alpha_{2u}$-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

Consultant Protocol, Amendment, and Positive Control Preparation Technique Immunohistochemical Demonstration of $Alpha_{2u}$-Globulin in Rat Kidneys of Study D, BRRC # 93N1229

(11 Pages)

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Protocol
IMMUNOHISTOCHEMICAL DEMONSTRATION OF α2u GLOBULIN IN RAT KIDNEYS OF STUDY D, BRRC # 93N1229

Sponsor:
Bushy Run Research Center
6702 Mellon Road
Export, PA 15632-8902

Test Facility:
Laboratory of Molecular Carcinogenesis and Mutagenesis
Department of Environmental Sciences and Engineering
The University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7400

Tissue: Kidney Animal: Rat Immunohistochemistry: α2u G

1) A study inventory log will be completed on receipt of slides and a copy of the log will be sent to Bushy Run Research Center to show receipt, a copy will be retained for records and the original will be returned to Bushy Run with the stained slides.
(attachment 1)

2) One slide from each kidney will be held in reserve.

3) One slide from each kidney will be deparaffinized and hydrated to phosphate buffered saline. The slides will stained for α2u G on the Leica Automated Immunostainer in one group of 18 slides and one group of 7 slides as per attached SOP (attachment 3). A known positive and negative control slide will be processed with each group.
The negative control will be female rat kidney, the positive control will be a known positive from a previous study.

The configuration and staining procedure to be used by the Automatic Immunostainer are noted in attachment 2

4) All slides will be stained (as noted in #3) and returned to the sponsor within 12 working days of receipt.

page 1

5) All stained and unstained slides will be returned in the original containers to the sponsor along with the original inventory log sheet. A copy of each processing run and list of attendant slides will also be sent.

6) All work shall be in compliance with Good Laboratory Practices (GLP,s).

James A. Swenberg, D.V.M., Ph.D.
Professor, Environmental Sciences and Engineering, Pathology and Toxicology

4/16/93
Date

Edward H. Fowler

~~James C. Norris, Ph.D.~~ EDWARD H. FOWLER, DVM, PhD
Study Director
wrong study director EHF 4/18/93

4/18/93
Date

STUDY INVENTORY LOG

Client _____ Study _____
Species _____ Dose/Sex _____

			Rcd by				Material prod.						Invnt by				
			Date								Q C'd by		Date				
Histo #	Animal No.	Notes	data	wet	blk	sl	data	wet	blk	sl	tech	Date	data	data	wet	blk	sl

data sent/rec'd _____ date _____
wet sent/rec'd _____ date _____
blks sent/rec'd _____ date _____
slides sent/rec'd _____ date _____

Page 3

HistoStainer Ig

V2.00

Configuration:

Number of rinses 3
Minimum incubation (minutes) 1
No external reservoir fitted.
Slides buffered at start of run.
Processing at room temperature.
Chromogen-substrates are not heated.

Default dispense areas are:
Centre
Outer

Primary antibodies are dispensed
by the instrument.
Chromogen-substrates are inserted
just before use.

The display light is on.
The display contrast is high.
Key presses are audible.
Progress messages are printed.

HistoStainer Ig

V2.00

Programs:

Program 8
Steps 6

Alpha 2u6	60 minutes
AntiN 1:50	30 minutes
StBCAP 1:50	30 minutes
SmM Levinis	10 minutes
New Fuchsin	20 minutes
Mayer's Hem	5 minutes

attachment 2
page4

S.O.P. α2u Globulin Immunohistochemistry

1) Deparaffinize and hydrate slides to PBS

2) α2u G antibody , diluted at 1:100,000 room temperature incubation for 60 min.

3) Three 5 min. rinses with PBS

4) Secondary antibody, diluted at 1:40 room temperature incubation for 30 min.

5) Repeat step #3

6) Streptaviden Label, diluted at 1:40 room temperature incubation for 30 min.

7) Repeat step #3

8) Block with 5mM Levimisole for 10 min.

9) New Fuchsin Chromogen (prepared as per manufactures instructions)

10) Rinse with distilled water for 2 minutes

11) Counterstain with Mayer's hematoxylin for 5 min.

12) Dehydrate, clear with Clear-Rite 3(an aliphatic hydrocarbon), coverslip with Permount.

* All dilutions are made with phosphate buffered saline(PBS) containing 1% bovine albumin serum(BSA)

*All PBS rinses contain 1% Tween 20

attachment 3

page 5

Protocol
IMMUNOHISTOCHEMICAL DEMONSTRATION OF α2u GLOBULIN IN RAT KIDNEYS OF STUDY D, BRRC # 93N1229

Sponsor:
Bushy Run Research Center
6702 Mellon Road
Export, PA 15632-8902

Test Facility:
Laboratory of Molecular Carcinogenesis and Mutagenesis
Department of Environmental Sciences and Engineering
The University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7400

Amendment to Protocol

1 Change in procedure.

Rationale: Equipment malfunctioned, Immunohistochemical procedure for the localization of α2u G had to be performed by hand.

Replacment S.O.P. follows below:

- Sections are deparaffinized with xylene and hydrated to deionized water through graded alcohols.
- Sections are then incubated in 4N HCl for 20 minutes at 37° C.
- Rinse in deionized water and place in 2 changes of PBSt* for 5 minutes each change.

The following steps are performed in a humidified incubation chamber at room temperature:

- Cover sections with anti α2u G at 1:100,000 dilution**, incubate for 1 hour.
- Place sections in 2 changes of PBSt for 5 minutes each change.
- Cover sections with secondary antibody at 1:50 dilution and incubate for 30 minutes.
- Place sections in 2 changes of PBSt for 5 minutes each change.
- Cover sections with Streptavidin Label at a 1:50 dilution and incubate for 30 minutes.
- Place sections in 2 changes of PBSt for 5 minutes each change.
- Block endogenous phosphatase activity with 5mM Levamisole for 10 minutes.
- Tap off Levamisole (using filter paper)and incubate for 20 minutes with working solution of New Fuchsin (as per manufacturers instructions)

- Rinse with deionized water and counter stain sections with Mayer's Hematoxylin for 5 minutes.
- Blue with tap water for 5 minutes, dehydrate, clear with an aliphatic hydrocarbon (Clear Rite 3, Richard Allan)and coverslip.

* PBSt is phosphate buffered saline which contains 1% Tween 20.
** All dilutions done using 1% Bovine Serum Albumin (BSA).

11/29/93
Date

James A. Swenberg, D.V.M., Ph.D.
Professor, Environmental Sciences and Engineering, Pathology and Toxicology

12/14/93
Date

Edward H. Fowler DVM, PhD
Study Director

Positive control tissue for α2u Globulin Immunohistochemistry

Study D. Bushy Run Research Center Project # 93N1229

Dosing and prediction of results was taken from the following paper:

D.R. Dietrich; J.A. Swenberg; Cancer Research 3512 - 3521, July 1, 1991; Presence of α2u Globulin is Necessary for d-Limonene Promotion of Male Rat Tumors

Procedure:

Two Sprague Dawley adult male rats weighing 487 and 512 grams were used to create positive controls for α2u Globulin Immunohistochemistry. The rats were gavaged with d-Limonene in corn oil (Mazola, Best Foods, Englewood Cliffs, NJ) at a dosage of 150 milligrams per kilogram for four days. Twelve hours after the last gavage the animals were sacrificed , the kidneys removed, serially sectioned at 1.5 to 2 millimeters and fixed in 10% Phosphate Buffered Formalin for 72 hours. Tissues were then sent to the contract laboratory for processing and sectioning (Pathology Associates, Inc., Durham, NC). The sections were then stained in accordance to the submitted protocol.

Image analysis was done utilizing the BioQuant 32 bit true color Image Analysis System (R&M Biometrics) attached to the Olympus BH-2 videomicroscope (Olympus Corp.). Images were acquired through a 4X PlanApo objective and a 3.3X Photo-eyepiece giving a total screen magnification of 165X and an analysis area 2.56 square millimeters. A total of eight fields per control kidney were analyzed, each field encompassing the capsule, cortex and the outer stripe.

The Image Analysis software determines the percent of area staining positive for α2u Globulin (a red color) by dividing the total (all fields) positive area (in square microns) by the total area of the tissue contained in all of the fields and then multiplying this number by 100.

Robert Schoonhoven

Robert Schoonhoven

Jan 13, 1994
Date

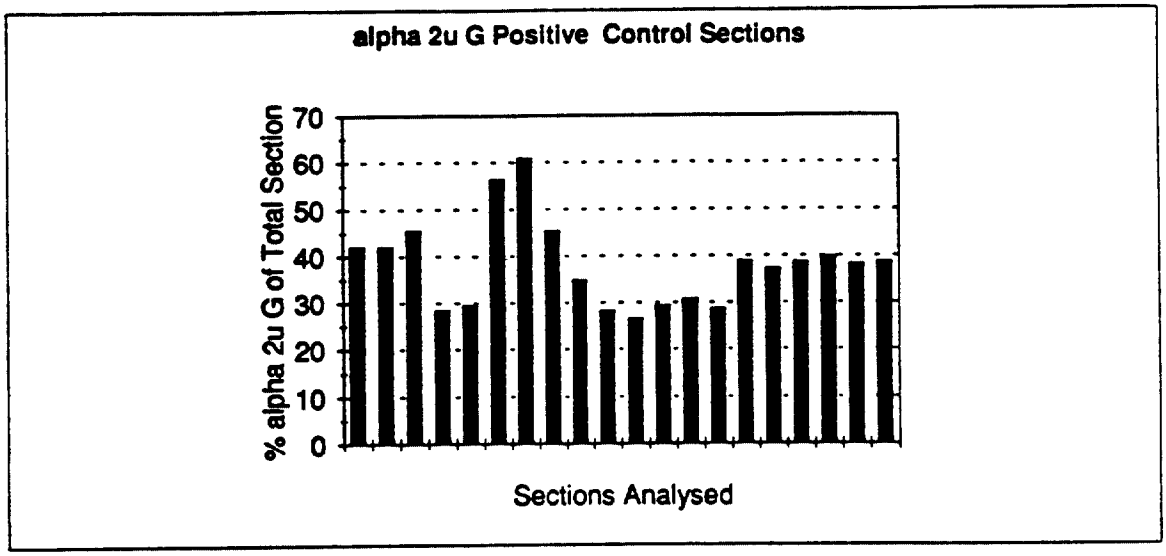
write over
acknowledgd. Received
from an outside
laboratory. CW 2-2-94

page1

IMAGE ANALYSIS RESULTS FOR POSITIVE CONTROL RAT KIDNEYS

Positive Control Values
42.07
42.11
45.55
28.48
29.52
56.37
60.94
45.40
34.79
28.20
26.49
29.30
30.80
28.69
38.87
37.24
38.64
39.93
38.26
38.74

Statistal Analysis of all Positive Control Slides	
Mean	38.02
Standard Error	2.02
Median	38.45
Mode	NA
Standard Deviation	9.26
Variance	85.84
Kurtosis	0.90
Skewness	0.98
Range	34.45
Minimum	26.49
Maximum	60.94
Sum	760.40
Count	20.00
Confidence Level(0.:	4.06



Immunohistochemical Evaluation of $Alpha_{2u}$-globulin in Kidneys of Fischer 344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

Protocol and Protocol Deviation

(6 Pages)

UNION CARBIDE

BUSHY RUN RESEARCH CENTER

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PROTOCOL

TITLE: Immunohistochemical Evaluation of Alpha$_{2u}$-globulin in Kidneys of ~~F-344~~ Fischer 344 (wrong designation) Rats from the Isopropanol Nine-Day Vapor Inhalation Study

BRRC PROJECT ID: 93N1229

SPONSOR: Isopropanol Panel
Chemical Manufacturers Association (CMA)
2501 M Street, NW
Washington, DC 20037

TESTING FACILITY: Bushy Run Research Center (BRRC)
Union Carbide Chemicals
and Plastics Company Inc.
6702 Mellon Road
Export, PA 15632-8902

Reviewed and Approved by:

Bushy Run Research Center:

Edward H. Fowler 5/12/93
Edward H. Fowler, DVM, Ph.D. Date
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Study Director

Linda J. Calisti 5/21/93
Linda J. Calisti, B.S. Date
Manager, Good Laboratory
Practices/Quality Assurance

5-21-93
John P. Van Miller, Ph.D., DABT Date
Director

Sponsor's Representative:

Cecilia W. Spearing 5/24/93
Cecilia W. Spearing Date
Manager, Isopropanol Panel

OBJECTIVE

The objective of this study is to evaluate the kidneys from a previous 9-day vapor inhalation study with isopropanol using an immunohistochemical procedure to identify $alpha_{2u}$-globulin. The protocol under which the 9-day vapor inhalation study was performed at BRRC was Project No. 89-81-69002. The study was completed and BRRC Report 53-514 was submitted to the Isopropanol Panel.

Design and Basis for the Study

The portions of this study conducted at BRRC will be in compliance with the following guidelines and standards:

U.S. Environmental Protection Agency (EPA), Toxic Substances Control Act (TSCA) Good Laboratory Practice (GLP) Standards, 40 CFR Part 792 (1989).

PERSONNEL

All personnel who participate in the conduct of the study will be documented in the raw data.

PROJECT DATES

Proposed Date for Submission of Slides for Immunostaining	April 15, 1993
Proposed Date for Submission of Draft Final Report	June 30, 1993

METHODS

Histopathology

Two slides will be obtained from the paraffin blocks of 25 kidneys from the 9-day vapor inhalation study. Slides will be prepared from 5 animals/sex for each of the control and 5000 ppm exposure concentration groups and 5 males from the 10,000 ppm exposure concentration group. These slides will be mailed to Dr. James Swenberg at the Laboratory of Molecular Carcinogenesis and Mutagenesis, Department of Environmental Sciences and Engineering, The University of North Carolina at Chapel Hill, for immunostaining. The procedures used by Dr. Swenberg will be detailed in a separate protocol to be prepared by him for this study.

When the staining has been completed, the slides will be returned to BRRC for evaluation and reporting. BRRC will maintain complete chain of custody records for the transfers. The blocks and slides will be archived with the isopropanol 9-day vapor inhalation study raw data, and reference will be made in those records to indicate the blocks were used for this present study.

Details concerning the chemical information, animal information, vapor generation procedures, and procedures used for biological evaluation are included in the original 9-day vapor inhalation study protocol and amendments. Only the information pertaining to rats in the original protocol applies to this protocol.

Statistical Evaluation

No statistical evaluations will be conducted on the results of this study due to the number of animals to be evaluated and the nature of the evaluations. A subjective evaluation of the presence or absence of immunostaining will be made and will appear in the summary tables.

ALTERATION OF PROTOCOL

Alterations to this protocol may be made as the study progresses. No changes in the protocol will be made without the specific written request or consent of the Sponsor. In the event that the Sponsor authorizes a protocol change verbally, such change will be honored. However, it then becomes the responsibility of the Sponsor to follow such verbal change with a written verification. BRRC reserves the right to revise the protocol or deviate therefrom solely at the discretion of the Study Director if prior approval of the Sponsor cannot be obtained and the integrity of the study is considered in jeopardy. In this event, the Sponsor will be notified of the alteration as soon as possible, and documentation of the change will be the responsibility of the Study Director.

RETENTION OF RECORDS

All raw data, documentation, the protocol and any amendments, and a copy of the final report generated as a result of this study will be retained in the BRRC Archives. Retention time will coincide with that for the original 9-day study.

Following the retention period specified above, the Sponsor will be contacted and given the option of taking receipt, destroying, or arranging for other storage of the data and materials. All data and materials mentioned above will remain the sole property of the Sponsor and can be removed from BRRC at the Sponsor's discretion.

REPORTS

Draft Final Report

An original and 5 copies of an unaudited draft of the final report will be submitted to the Sponsor approximately 2 months after the completion of the slide preparation. This report will be a comprehensive report which will include all information necessary to provide a complete and accurate description and evaluation of the test procedures and results. It will include: a summary; appropriate text discussions of the experimental design, materials and methods, and results; and summary tables of pathology data. In addition, it will contain an appendix with individual animal data.

Final Report

The draft final report will be reviewed by the Sponsor, and comments on the report will be provided to BRRC within 8 weeks from the date of submission of the draft version. BRRC will consider these comments in preparing the final report. Assuming the Sponsor's comments are received at the specified time and no major revisions are required, BRRC will submit a final report within 12 weeks of issuance of the draft report.

The final report will be audited by the Quality Assurance Unit and contain a signed quality assurance statement. It will conform to the formatting specifications of EPA PR notice 86-5. An original and 5 copies of the final report will be submitted to the Sponsor.

GOOD LABORATORY PRACTICE COMPLIANCE

BRRC, through the administration of a quality assurance program by the Good Laboratory Practice Committee and Quality Assurance Unit, assures compliance of all phases of studies conducted at BRRC with existing regulations and generally accepted good laboratory practices.

The protocol, any amendments, the raw data, and the final report will be reviewed by the BRRC Quality Assurance Unit.

Immunohistochemical Evaluation of Alpha2u-globulin in Kidneys of F-344 Rats from the Isopropanol Nine-Day Vapor Inhalation Study

BRRC Project 93N1229

Protocol Deviation

1. According to the study protocol, 2 slides/animal were to be prepared. At least 2 slides/animal were prepared. Additional slides were prepared from the male rats.

It is the Study Director's belief that this deviation will not affect the outcome of the study.

UNION CARBIDE

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STUDY TITLE

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

For Distribution by CMA
CHEMSTEW DIVISION
From Cecilia Spearing
Ref. No. IPA Phase 4
Date 5/10/94

TEST SUBSTANCE

Isopropanol (Isopropyl Alcohol)

DATA REQUIREMENT

Not Applicable

Contains No CBI

AUTHORS

H. D. Burleigh-Flayer and J. M. Hurley

STUDY COMPLETION DATE

May 9, 1994

PERFORMING LABORATORY

Bushy Run Research Center (BRRC)
Union Carbide Corporation (UCC)
6702 Mellon Road
Export, PA 15632-8902

LABORATORY PROJECT ID

93N1245

SPONSOR

Isopropanol Panel
Chemical Manufacturers Association
2501 M Street, NW
Washington, DC 20037

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

The portions of this study conducted by BRRC meet the requirements of Toxic Substances Control Act (TSCA) Good Laboratory Practice Standards, 40 CFR Part 792.

Study Director: Heather D. Burleigh-Flayer 4/18/94
Heather D. Burleigh-Flayer, Ph.D. Date
Bushy Run Research Center

Sponsor's Representative: Cecilia W. Spearing 4/19/94
Cecilia W. Spearing Date
Manager, Isopropanol Panel

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Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

SUMMARY

This study was conducted in order to assess the reproducibility and reversibility of increases in motor activity in female rats observed in a previously performed subchronic inhalation study (Burleigh-Flayer et al., 1992; BRRC Report 53-589). Two groups, each containing 30 female Fischer 344 rats, were exposed to target concentrations of 0 (control) and 5000 ppm isopropanol vapor (CAS No. 67-63-0) for 6 hours/day for 5 days/week. Fifteen of the animals in the control and 5000 ppm groups were exposed for 9 weeks (designated as Test Block 2) while the other 15 animals in each group were exposed for 13 weeks (designated as Test Block 1). Motor activity was measured for all animals prior to the start of exposure and 1 day following the completion of Study Weeks 4, 7, and 9. Motor activity for animals receiving 13 weeks of exposure was also measured 1 day following completion of 11 and 13 weeks of exposure. In order to assess the reversibility of the effects, animals assigned to Test Block 2 were further evaluated 2, 4, and 7 days following their final exposure. Animals assigned to Test Block 1 were evaluated 2, 4, and 7 days following exposure and weekly for 5 additional weeks (14, 21, 28, 35, and 42 days following exposure). In addition to the motor activity measurements, clinical signs of overt toxicity were assessed daily. Body weights were measured weekly and at the time of motor activity measurements for all animals.

A mean (± SD) isopropanol analytical concentration of 5011 (± 105) ppm was measured during the exposures. No mortality occurred during the study. Clinical signs observed for some of the female rats during exposures to 5000 ppm included hypoactivity and lack of a startle reflex. The only exposure-related clinical sign observed during nonexposure periods was swollen periocular tissue. Decreased body weight and body weight gain were noted for rats exposed to isopropanol at the end of the first week of exposure. Following this timepoint, the body weight of the exposed rats increased, and, beginning at Week 3, increased body weight and body weight gain were noted for these animals. Following the exposure regimen, increases in the body weight and body weight gain remained, although some recovery of body weight occurred.

For animals receiving 9 weeks of exposure, increases in mean cumulative motor activity were noted 1 day following the completion of Weeks 4, 7, and 9 of exposure. During the recovery period, mean cumulative test session activity was not different from control values 2 days following their last exposure during Week 9 for this group of animals. For animals receiving 13 weeks of exposure, mean cumulative test session activity was increased 1 day following the completion of Weeks 4, 7, 9, 11, and 13 of exposure. During the recovery period, increases in mean cumulative test session activity for Test Block 1 animals were also observed 2, 4, and 7 days following their last exposure during Week 13. Mean cumulative test session activity for this group of animals was not different from the control value at 14 days following their last exposure.

Associated with the increases in mean cumulative activity, interactions between exposure concentration and test session time were noted which were

indicative of changes in the shape of the test session activity versus test session time curve. For animals from Test Block 2, changes in the shape of the test session activity versus time were observed at Week 7. For animals from Test Block 1, changes in the shape of the test session activity versus time were observed at Weeks 4, 9, and 11 as well as 4 days following the last exposure.

Some subtle changes in the shape of the activity versus test session time curve were also observed at some postexposure timepoints for animals from both test blocks following the timepoint where recovery of the mean cumulative activity had occurred. The difference in the curves appeared to be a result of increases in mean activity during the initial 10 to 30 minutes of the test session. This change in the shape of the test session activity versus time curve was observed at 4, 14, 21, and 35 days following the last exposure for the Test Block 1 animals and 7 days following the last exposure for the Test Block 2 animals. It is unclear whether these changes were related to the exposure because of the limited nature of the effect observed. Effects in the shape of the activity versus test session time curve similar to those observed in this study were not observed in the previous 13-week vapor inhalation study with isopropanol (BRRC Report 53-589). In the previous study, increases in activity for isopropanol-exposed animals were observed primarily during the intervals at the end of the test sessions. While a direct comparison to the previous study is limited by the difference in the postexposure testing schedules, the dissimilarity in the results between the studies suggests that the limited changes in the shape of the test session activity versus time curves noted in the present study were unrelated to isopropanol exposure. No change in the shape of this curve was observed at 42 days following the last exposure, indicating that complete recovery of any motor activity effects had occurred.

In conclusion, increases in motor activity similar to those observed in female rats in a previous study on isopropanol (BRRC Report 53-589) were noted in this study. Complete recovery from these effects was observed within 42 days following the last exposure. The relevance to human health of increased motor activity in rodents, without any other neurobehavioral changes or neuropathologic findings, is unknown.

OBJECTIVE

The objective of this study was to evaluate the reproducibility and reversibility of motor activity effects observed in female Fischer 344 rats in a previous subchronic study with isopropanol (BRRC Report 53-589).

BACKGROUND INFORMATION

In a previous subchronic study (BRRC Report 53-589), 5 groups of Fischer 344 rats were exposed 6 hours/day, 5 days/week, for at least 13 weeks to isopropanol vapor (CAS No. 67-63-0). Target concentrations of isopropanol were 0 (control), 100, 500, 1500, and 5000 ppm. Monitors for toxic effects included clinical signs, neurobehavioral evaluations, and microscopic evaluations, as well as other endpoints. The functional observational battery was performed on ten rats/sex/group from the 0, 500, 1500, and 5000 ppm groups prior to the first exposure and on the weekend following Exposure Weeks 1, 2, 4, 9, and 13. Motor activity tests were performed on 15 rats/sex/group from the 0, 500, 1500, and 5000 ppm groups prior to the first exposure and on the weekend following Exposure Weeks 4, 9, and 13. Detailed microscopic evaluations were performed on the nervous system of 6 rats/sex/group from the 0, 500, 1500, and 5000 ppm groups following perfusion fixation of tissues.

No exposure-related mortalities occurred during the study. Clinical signs observed in some of the rats during exposures at 5000 ppm included ataxia, narcosis, lack of a startle reflex, and hypoactivity. These signs were seldom observed or were completely absent following exposures. Neurobehavioral evaluations indicated no changes in the functional observational battery for male or female rats; however, increased motor activity for female rats in the 5000 ppm group was noted at Study Weeks 9 and 13. No increases in motor activity were observed for male rats at any timepoint. Neuropathologic examination revealed no exposure-related lesions in the central or peripheral nervous system of exposed male or female rats.

The present study was conducted to determine if the motor activity effects observed in the previous subchronic study could be reproduced. Thus, the design for the present study included only motor activity measurements since no exposure-related changes in the functional observational battery or neuropathology evaluations were observed. In addition, only female rats were used for this study because changes in motor activity were not observed for male rats in the previous study. Since the increases in motor activity in the female rats were observed following the ninth and thirteenth weeks of exposure (with the greatest increase being observed following Exposure Week 9), it was decided that the reversibility of these effects should also be evaluated at these weeks in the present study. In order to evaluate motor activity during the weeks following Exposure Weeks 9 and 13, the exposure group (and the control gr p) were divided into 2 test blocks. Half of the rats in each group wer xposed to isopropanol for 9 weeks (Test Block 2), and the other half were posed for an additional 4 weeks for a total of 13 weeks (Test Block 1). Motor activity measurements could then be made during the tenth and fourteenth weeks of the study for Test Block 2 animals and Test Block 1 animals, respectively. In addition, with 2 test blocks, the time course of reversibility could also be compared for the 2 different exposure regimens.

TARGET CONCENTRATION SELECTION

Based upon the motor activity findings in the previous subchronic study, target concentrations of 0 (control) and 5000 ppm were selected by the Sponsor.

MATERIALS AND METHODS

The protocol and 2 protocol amendments detailing the design and conduct of this study are included in Appendix 7. Any deviations from the written protocol will also be included in Appendix 7 of the final report.

Test Substance

Two 55-gallon drums of isopropanol (isopropyl alcohol; Lot No. TK-1543 4/15/93, CAS No. 67-63-0) were received on April 26, 1993, from Union Carbide Corporation (UCC; Texas City, TX) and were assigned BRRC Sample Nos. 56-127 A and B. The drums were stored in an outdoor chemical storage area. When needed, a 55-gallon drum of isopropanol was moved to and stored in Room 112. Samples of the test substance were then dispensed into fireproof containers and stored in Room 139. The test substance was a colorless liquid with a characteristic odor. A reserve sample was retained from both samples of the test substance. The method of synthesis of the test substance was documented by the Sponsor. The purity of the test substance was determined by the Analytical Skill Center at the UCC South Charleston, WV, Technical Center to be greater than 99.9%; pertinent chemical and physical properties of isopropanol, as well as the compositional analyses, are included in Appendix 1.

Animals and Husbandry

Seventy-five female Fischer 344 rats (nulliparous and nonpregnant) arrived on May 4, 1993, from Harlan Sprague Dawley, Inc. (Indianapolis, IN). They were designated by the supplier to be approximately 35 days old (the birth date was recorded as March 30, 1993) upon arrival.

Animals were housed in Room 107 from arrival to termination of the study, except during exposures and motor activity evaluations. Exposures were performed in Room 139 and motor activity evaluations were performed in Room 164-C.

Within 2 days of receipt, the animals were examined by a clinical veterinarian, and representative animals were subjected to a pretest health screen which included full necropsy, histologic examination of selected tissues, and examinations for fecal parasites. Serum viral antibody analyses were performed on animals not selected for use in the study approximately 2 weeks after receipt. Based on the results of these evaluations, these animals were considered to be in good health and suitable for use on the study.

With the exception of animals selected for the pretest health screen, which were identified by a toe-clipping procedure after sacrifice, all animals were assigned a unique number and identified by cage tags and tail tattoos.

Upon arrival at BRRC, the animals were housed 2/cage for approximately 1 week and then individually housed until study termination. The purpose of the group housing was to help acclimate the rats to the automatic watering system. Animals were housed in stainless steel, wire mesh cages (22.5 x 15.5 x 18.0 cm) throughout the study except during exposures and the behavioral evaluations. The motor activity evaluation cages (23.5 x 40.0 x 18.0 cm) and exposure cages (35.0 x 17.0 x 18.0 cm) were also wire mesh. DACB® (Deotized Animal Cage Board; Shepherd Specialty Papers, Inc.) was placed under the housing and motor activity cages and changed at least 3 times a week. An automatic timer was set to provide fluorescent lighting for a photoperiod of 12 hours (approximately 0500 to 1700 hours). The temperature and relative humidity in the animal housing room and the motor activity testing room were recorded (Cole-Parmer Hygrothermograph® Seven-Day Continuous Recorder, Model No. 8368-00, Cole-Parmer Instrument Co., Chicago, IL). The temperature was routinely maintained at 66-77°F; the relative humidity was routinely maintained at 40-70%. Temperature and relative humidity in the exposure chambers were routinely maintained at 22 ± 2°C and 40-60%, respectively, and recorded approximately twice each hour during exposures. White noise generated during motor activity testing was recorded and maintained at approximately 59 to 62 dBA. Any minor exceptions to these specified ranges were noted in the raw data. There were no deviations from the specified ranges that were considered to impact the results of the study.

Tap water (Municipal Authority of Westmoreland County, Greensburg, PA) was available ad libitum, except during exposures, and was delivered by an automatic watering system with demand control valves mounted on each rack. Water analyses were provided by the supplier, Halliburton NUS Environmental Laboratories, Materials Engineering & Testing Company, and Lancaster Laboratories, Inc. at approximately 6-month intervals. EPA standards for maximum levels of contaminants were not exceeded. Ground, certified Rodent Chow® #5002 (Purina Mills, Inc.; PMI Feeds, Inc.) was available ad libitum, except during exposures and motor activity evaluations. Analyses for chemical composition and possible contaminants of each feed lot were performed by Purina Mills, Inc. (PMI Feeds, Inc.), and the results were included in the raw data. The maximum levels of known contaminants in the feed were below standards which could interfere with the study results.

Animal Acclimation

The acclimation period was approximately 3 weeks. During this period, the animals were weighed 3 times, approximately weekly and on the day of preexposure motor activity testing. Detailed clinical observations were conducted approximately weekly. Generally, cage-side animal observations were conducted at least once daily, and mortality checks were conducted twice daily (morning and afternoon). The animals were examined just prior to the end of the acclimation period by a clinical veterinarian. The fate of all animals was documented in the raw data.

Study Organization

Following the second pretest body weight, the animals were assigned to the exposure group or to the control group using a computerized randomization procedure. At the time of group assignment, only animals with body weights within ± 20% of the population mean for each sex were included. The animals

were further assigned sequentially to 2 test blocks with different exposure durations. The body weight range just prior to the first exposure was 104 to 129 g. The following table summarizes the organization of the study.

	Number of Animals		
Group	Test Block 1	Test Block 2	Target Concentration (ppm)
Control	15	15	0
High	15	15	5000

The exposures began on May 24, 1993 (Study Day 0). Animals were exposed for 6 hours/day for 5 consecutive days/week for either 9 or 13 weeks. Animals were not exposed during one designated BRRC holiday. The 6-hour exposure period was defined as the time when the generation system was turned on and subsequently turned off. The control animals were exposed to filtered air only using the same exposure regimen. The final exposure for animals exposed for 9 weeks (Test Block 2) occurred on July 23, 1993. The final exposure for animals exposed for 13 weeks (Test Block 1) occurred on August 20, 1993. Test Block 2 animals were sacrificed on August 6, 1993, and Test Block 1 animals were sacrificed on October 5, 1993.

Administration of Test Substance

Inhalation Chamber Description and Operation

The inhalation chambers (Wahmann Manufacturing Company, Timonium, MD) used for this study were located in Room 139. The chambers, constructed from stainless steel with glass windows for animal observation, were rectangular (207 x 98 x 213 cm) in shape. The volume of each chamber was approximately 4320 l, and the airflow was set at approximately 900 l/min (12.5 air changes/hr) for all of the chambers (including the control chamber). A Dwyer Magnehelic® pressure gauge (Dwyer Instruments, Inc., Michigan City, IN) was used to monitor chamber airflow. The theoretically-derived time (t_{99}) required for the 5000 ppm chamber to reach 99% of the target concentration was calculated to be 22 minutes.

Vapor Generation

Liquid isopropanol was metered from a container by a piston pump (G-50 FMI pump with a 3/8" piston; Fluid Metering, Inc., Oyster Bay, NY) into a heated glass evaporator similar in design to that described by Snellings and Dodd (1990). Three evaporators were connected together in series in order to increase the surface area for evaporation of the test substance and reduce the amount of heat needed to produce the vapor. In addition, in order to further increase the evaporative surface, marbles were added to 1 of the heated glass evaporators. The temperature of the evaporators was maintained at the lowest level sufficient to vaporize the test substance. Evaporator temperatures were measured during preliminary level setting. Evaporator temperatures were determined without the test substance using a thermocouple attached to a digital recorder (Type K thermocouple with a Fluke 51 K/J temperature indicator; John Fluke Mfg. Co. Inc., Everett, WA). The temperature probe was

positioned on the glass evaporator at the second spiral from the top. The oxygen content of the exposure chambers was also measured prior to the initiation of the study using an MSA® Oxygen Indicator Model 245R (Mine Safety Appliance Company, Pittsburgh, PA).

Chamber Atmosphere Evaluations

The 5000 ppm exposure chamber atmosphere was analyzed for isopropanol approximately twice each hour during each 6-hour exposure period by flame ionization gas chromatography. The nominal concentration was calculated by dividing the total amount of isopropanol delivered to the chamber by the total airflow rate. The control chamber atmosphere was also analyzed for isopropanol approximately twice each hour during each exposure day.

The distribution of isopropanol vapor within the exposure chamber was examined prior to the initiation of the study. A description and the results of the chamber distributions are included in Appendix 1.

Chamber temperature and relative humidity were recorded using a Fisherbrand® dial-type thermometer (Fisher Scientific, Pittsburgh, PA) and an Airguide humidity indicator (Airguide Instrument Co., Chicago, IL). Temperature and relative humidity measurements were recorded approximately 2 times/hour during each 6-hour exposure.

Observations and Measurements

Standard In-life Evaluations

All animals assigned to the study were observed for mortality and clinical signs of overt toxicity twice each day, 7 days a week, with exceptions which are detailed in Appendix 7. Detailed examinations were performed weekly.

Body weight data were collected weekly for all animals during the exposure regimen. Body weight data were also collected on the days of motor activity evaluations.

Motor Activity Evaluations

Motor activity was assessed for all animals using an automated recording apparatus (San Diego Instruments Inc., San Diego, CA). The exposure groups were distributed across motor activity test enclosures to limit bias resulting from possible differences in environmental factors or recorder sensitivity.

Motor activity evaluations were performed prior to the initiation of exposures and on the Saturday following the fourth, seventh, and ninth weeks of exposure for animals from both test blocks and following the eleventh and thirteenth weeks of exposure for animals from Test Block 1. To assess reversibility, animals assigned to Test Block 2 were further evaluated 2, 4, and 7 days following the final exposure during Week 9. Animals assigned to Test Block 1 were further evaluated 2, 4, 7, 14, 21, 28, 35, and 42 days following the final exposure during Week 13. Test sessions for Test Block 1 animals began at approximately 8:30 a.m. and at approximately 10:30 a.m. for Test Block 2 animals. The latency from the end of exposure and the beginning of the 1-day postexposure test sessions was approximately 18 and 20 hours for the Test

Block 1 and Test Block 2 animals, respectively. All test sessions were 90 minutes in duration, and data were collected in 9 consecutive 10-minute intervals. Data for ambulatory activity, fine motor activity, rearing, and the sum of these individual types of activity (sum of all counters or total activity) were collected and analyzed. The group distribution scheme across motor activity enclosures and the procedures used to evaluate the operation of the individual animal enclosures are included in Appendix 6.

Data Analyses

The data for quantitative continuous variables were intercompared for the 5000 ppm group and the control group by use of Levene's test for equality of variances and t-tests. When Levene's test indicated similar variances, a pooled t-test was used for pairwise comparisons. When Levene's test indicated heterogeneous variances, a separate variance t-test was used for pairwise comparisons.

A nested analysis of motor activity data was performed using repeated-measures analysis of variance, with exposure level as the grouping factor and test period and intrasession interval as within-subjects factors. Significant interactions between exposure level and test period or exposure level, test period, and intrasession interval led to additional repeated-measures analyses of data collected at each test period, with exposure level as the grouping factor and intrasession interval as the within-subjects factor. The epsilon-adjustment procedure (Greenhouse-Geisser correction) was used in the repeated-measures analysis of motor activity data. Significant repeated-measures exposure level interactions at an individual test period for an individual counter led to additional exposure group comparisons of total cumulative activity for that counter as described above for parametric data. Exposure group comparisons of total cumulative test session activity were performed at each test period.

For all statistical tests the probability value of < 0.05 (two-tailed) was used as the critical level of significance. Statistical analyses were performed using BMDP Statistical Software (Dixon, 1990). Summaries of the statistical programs used to analyze motor activity data and the resulting p-values for repeated-measures statistical analyses of motor activity data are included in Appendix 6. To avoid redundancy, the p-values for exposure group comparisons calculated using Levene's test for equality of variances and t-tests are not presented since the p-values were identical or very similar to those calculated using repeated-measures analysis.

Various models of calculators, computers, and computer programs may have been used to analyze data for this study. Since various models round or truncate numbers differently, values in some tables may differ slightly from those in other tables or from independently calculated data. The integrity of the study and interpretation of the data were unaffected by these differences.

RETENTION OF RECORDS

All raw data, documentation, the protocol and any amendments, specimens, and a copy of the final report generated as a result of this study will be retained in the BRRC Archives for at least 10 years. A reserve sample of test

substance from each container used during the study will also be retained in the BRRC Archives.

RESULTS AND DISCUSSION

All references of differences in group mean values in the following text refer to comparisons of statistically significant differences between the exposure group and the control group, unless otherwise noted. Repeated reference to the control and the statistical significance will not be made in order to simplify the text.

Chamber Atmosphere

Detailed results and discussion of the chamber atmosphere measurements are included in Appendix 1.

The target concentrations of isopropanol were 0 (control) and 5000 ppm. Control animals were exposed to filtered air only. For the target concentration of 5000 ppm, the mean isopropanol analytical concentration (± standard deviation) measured during exposures was 5011 (± 105) ppm; the mean nominal concentration (± standard deviation) measured was 4731 (± 56) ppm. The mean of the analytical-to-nominal concentration ratios was calculated to be 1.06. No daily mean concentration of isopropanol vapor above the estimated detection limit of 10 ppm was measured in the control chamber.

The means (± SD) of the daily mean chamber temperature values were 20.5 (± 0.53) and 20.3 (± 0.46) °C for the 0 and 5000 ppm exposure chambers, respectively. The means of the daily mean chamber relative humidity values were 52.1 (± 2.12) and 53.3 (± 2.72) percent for the 0 and 5000 ppm exposure chambers, respectively. The heated evaporator temperatures taken prior to exposure ranged from 37.7-38.3°C. Proper vapor distribution within the exposure chambers was demonstrated; a coefficient of variation value of less than 0.3% was found for the chamber distribution evaluation. The oxygen content within the exposure chambers was 20.5-20.8% prior to the start of the study.

Clinical Observations and Mortality

Mortality data and clinical observations are summarized in Table 1. Individual animal fate and clinical observation data are included in Appendix 3.

No mortality occurred during the study. Clinical signs noted during the exposures to 5000 ppm in some of the rats included hypoactivity and lack of a startle reflex. The only exposure-related clinical sign observed during nonexposure periods in the rats from the 5000 ppm group was swollen periocular tissue.

Body Weight

Absolute body weight and body weight gain data for weights collected weekly during exposures are summarized in Tables 2 and 3. Corresponding graphs of body weight and body weight gain (grams) versus time (weeks) are presented in Figures 1 and 2. Absolute body weight and body weight gain data for weights

collected prior to the motor activity evaluations are summarized in Tables 4 and 5. Corresponding graphs of body weight and body weight gain (grams) versus time (weeks) are presented in Figures 3 and 4. Individual animal body weight data are included in Appendices 4 and 5.

For rats from the 5000 ppm group, decreased body weight and body weight gain were noted at the end of the first week of exposure. From this timepoint on, the body weight for rats from the 5000 ppm group increased, and, by the end of Week 3, increased body weight and body weight gain were noted. At the end of Week 9, mean body weight and body weight gain for Test Block 2 animals were increased approximately 6 and 17%, respectively. At the end of Week 13, mean body weight and body weight gain for Test Block 1 animals were increased approximately 5 and 13%, respectively. Following the exposure regimen, increases in body weight and body weight gain remained, although some recovery of these parameters appeared to occur. At the end of Week 19 (42 days following exposure), the mean body weight and body weight gain for Test Block 1 animals were 3 and 9%, respectively.

Motor Activity

Cumulative counts of total motor activity for each test session are summarized in Table 6. Figures 5 and 6 represent the cumulative counts of motor activity versus exposure level for the 2 test blocks. Total motor activity data for 10-minute interval counts are summarized in Tables 7 to 23. Figures 7 and 8 represent total motor activity versus test session time for the 2 test blocks. The report, summary tables and graphs, and a summary of the statistical analyses performed and the resulting p-values for motor activity data are included in Appendix 2. Individual motor activity data are included in Appendix 6.

For animals exposed to 5000 ppm of isopropanol, increases in mean cumulative motor activity (the sum of total activity across the 90-minute test session) were observed at many of the evaluation timepoints during the exposure regimen. Although total motor activity was increased at these timepoints, none of the individual types of activity (ambulation, fine motor activity, and rearing activity) for animals assigned to either test block appeared to be preferentially affected.

For animals assigned to Test Block 2 (receiving 9 weeks of exposure), increases in mean cumulative motor activity (the sum of total activity across the 90-minute test session) were noted 1 day following the completion of 4, 7, and 9 weeks of exposure. Mean cumulative test session activity for these animals was increased 41% at Week 4, 79% at Week 7, and 76% at Week 9. During the recovery period, mean cumulative test session activity was not different from control values for this group of animals at 2, 4, and 7 days following their last exposure during Week 9.

For animals assigned to Test Block 1 (receiving 13 weeks of exposure), mean cumulative test session activity was increased 1 day following the completion of 4, 7, 9, 11, and 13 weeks of exposure. Mean cumulative test session activity for animals exposed to isopropanol for 13 weeks was increased 35% at Week 4, 53% at Week 7, 144% at Week 9, 103% at Week 11, and 116% at Week 13. During the recovery period, increases in mean cumulative test session activity for these animals were also observed 2, 4, 7, and 28 days following their last

exposure during Week 13. Mean cumulative test session activity was increased 79%, 70%, and 38% for these animals 2, 4, and 7 days, respectively, following their last exposure. Mean cumulative test session activity was not different from control values for this group of animals at 14, 21, 35, and 42 days following their last exposure during Week 9. An increase in mean cumulative test session activity was observed for animals from Test Block 2 at 28 days following their last exposure. However, this was not believed to be exposure related since recovery in test session activity had occurred for 2 weeks prior to this timepoint, and no subsequent increases in motor activity were noted in the remaining weeks.

The increases in mean cumulative activity often resulted in interactions between exposure concentration and test session time. These statistically significant interactions were indicative of changes in the shape of the curves in which activity versus 10-minute time intervals during the test session was plotted. For animals from Test Block 2, changes in the shape of the test session activity versus time were observed at Week 7. For animals from Test Block 1, changes in the shape of the test session activity versus time curve were observed at Weeks 4, 9, and 11 as well as 4 days following the last exposure. At these different evaluation timepoints, the mean activity of the animals was increased at most of the 10-minute intrasession intervals.

Some subtle changes in the shape of the activity versus time curve were also observed for animals from both test blocks following the timepoint where recovery of the mean cumulative activity had occurred and appeared to be a result of increases in mean activity during the initial 10 to 30 minutes of the test session. These changes in the shape of the test session activity versus time curve were observed at 4, 14, 21, and 35 days following the last exposure for the Test Block 1 animals and 7 days following the last exposure for the Test Block 2 animals. It is unclear whether these changes in the shape of the curve were related to the exposure because of the limited nature of the effect observed. No change in the shape of the test session activity versus time curve was observed at 42 days following the last exposure. Changes in the shape of the test session activity versus time curve noted in this study were not observed in the previous subchronic vapor inhalation study with isopropanol (BRRC Report 53-589). In the previous study, increases in activity for isopropanol-exposed animals were observed primarily during the intervals at the end of the test sessions. While a direct comparison to the previous study is limited by the difference in the postexposure testing schedules, the dissimilarity in the results between the studies suggests that the limited changes in the shape of the test session activity versus time curves noted in the present study were unrelated to isopropanol exposure.

CONCLUSIONS

Exposure of female rats to 5000 ppm of isopropanol vapor produced some clinical signs during the exposures which included hypoactivity and lack of a startle reflex. Exposure to isopropanol also resulted in an initial decrement in the body weight and body weight gain during the first week of exposure which was followed in subsequent weeks by increases in these parameters. These clinical signs and body weight effects had been noted in previous studies on isopropanol vapor (BRRC Reports 53-514, 53-589, and 91N0133).

The increases in motor activity observed for female rats at Weeks 9 and 13 in the previous subchronic study (BRRC Report 53-589) were reproduced in this study. Increases in motor activity were observed for the female rats following 4, 7, 9, and 13 weeks of exposure. The maximum increase in motor activity appeared to occur at 9 weeks of exposure. Reversibility of this increase in cumulative activity during the test session was observed within 14 days following the thirteenth week of exposure. Subtle differences in the shape of the activity versus test session time curve were noted during the recovery period, although it was unclear whether these changes were related to the isopropanol exposures due to the limited nature of the changes. In any event, complete reversibility of the changes in motor activity was observed within 42 days following exposure.

A possible hypothesis for the increased motor activity observed in this study is a rebound effect from the sedation observed upon exposure to isopropanol. Findings indicative of sedation of the central nervous system were demonstrated previously in the rat following a single exposure to 5000 ppm isopropanol (BRRC Report 53-554). Repeated exposure to high concentrations of isopropanol in the present study may have resulted in pharmacological changes in the nervous system which stimulated motor activity once exposure to isopropanol was stopped. The rebound effect observed here may be likened to the tolerance/withdrawal phenomenon typically seen following repeated ethanol exposure (Gonzalez and Czachura, 1989; Grant et al., 1990; Kalant, 1977). However, an analogy to ethanol is made with the caveat that the effects noted for animals in this study are markedly less pronounced compared to those typically seen following repeated ethanol exposure.

In conclusion, increases in motor activity similar to those observed in female rats in a previous study (BRRC Report 53-589) on isopropanol were noted in this study. Complete recovery from these motor activity effects was observed within 42 days following the last exposure. The relevance to human health of increased motor activity in rodents, without any other neurobehavioral changes or neuropathologic findings, is unknown.

REVIEW AND APPROVAL

Study Director: Heather D. Burleigh-Flayer, Ph.D. — Date: 5/9/94

Associate Director: James D. Sun, Ph.D. — Date: 5-9-94

Director: John P. Van Miller, Ph.D., DABT — Date: 5-9-94

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Senior Supervisors: L. C. Fisher
E. V. Weaver

Scientist: I. M. Pritts

Additional personnel are listed in the raw data.

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TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF CLINICAL OBSERVATIONS[a]

BOTH TEST BLOCKS COMBINED

CATEGORY FINDING (LOCATION)	GRADE[b]	PPM 0 (DAYS)[c]	5000 (DAYS)
DEAD			
BLOCK 1 - SCHEDULED SACRIFICE	P	15 (134)	15 (134)
BLOCK 2 - SCHEDULED SACRIFICE	P	15 (74)	15 (74)
BODY			
URINE STAINS	P	1(18- 60)	3(32- 60)
EYES/EARS/NOSE			
SWOLLEN PERIOCULAR TISSUE		0	8
(EYE-BOTH)	P	0	6(25- 74)
(EYE-RIGHT)	P	0	2(46- 60)
PERIOCULAR ENCRUSTATION		0	3
(EYE-LEFT)	P	0	1 (60)
(EYE-RIGHT)	P	0	2 (60)

[a]Number of animals exhibiting the finding at least once during the study.
[b]Grades: P = present, 1 = mild, 2 = moderate, 3 = severe.
[c]Earliest to latest day a finding of the specified grade was observed.

TMOD_RPT:IPASRF.CLS

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS
SUMMARY OF BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN (GRAMS)

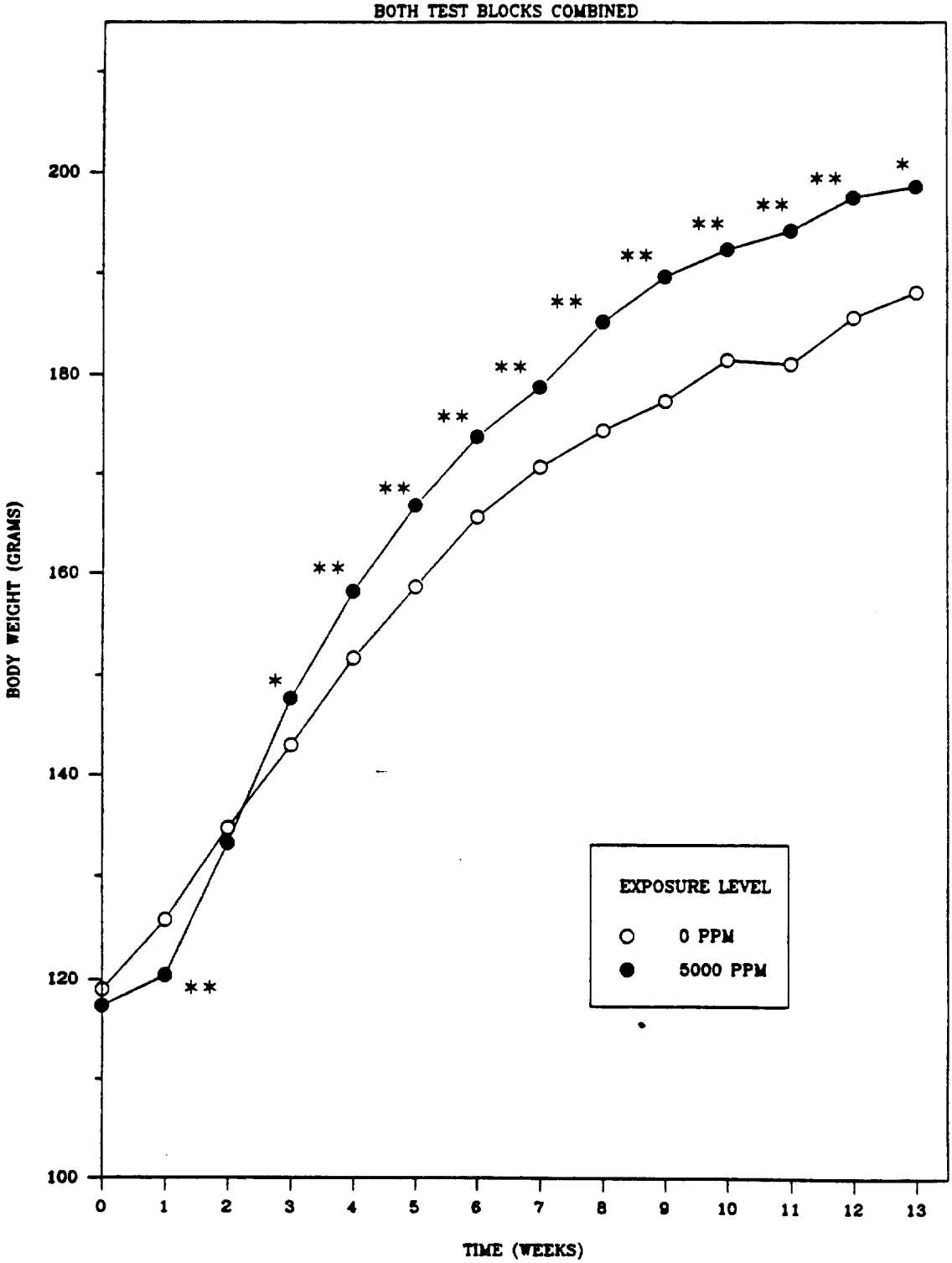
BOTH TEST BLOCKS COMBINED

GROUP: PPM	0	5000
WEEK 0		
MEAN	119.0	117.4
S.D.	6.09	5.33
N	30	30
WEEK 1		
MEAN	125.8	120.4**
S.D.	6.74	5.23
N	30	30
WEEK 2		
MEAN	134.7	133.2
S.D.	7.46	6.22
N	30	30
WEEK 3		
MEAN	143.0	147.7*
S.D.	7.71	7.18
N	30	30
WEEK 4		
MEAN	151.7	158.2**
S.D.	8.68	7.35
N	30	30
WEEK 5		
MEAN	158.7	166.8**
S.D.	9.38	7.08
N	30	30
WEEK 6		
MEAN	165.6	173.7**
S.D.	9.30	7.15
N	30	30
WEEK 7		
MEAN	170.6	178.7**
S.D.	9.51	7.55
N	30	30
WEEK 8		
MEAN	174.3	185.2**
S.D.	10.27	6.86
N	30	30
WEEK 9		
MEAN	177.3	189.7**
S.D.	10.79	8.16
N	30	30
WEEK 10		
MEAN	181.4	192.4**
S.D.	12.84	7.94
N	15	15
WEEK 11		
MEAN	181.0	194.2**
S.D.	13.03	7.60
N	15	15
WEEK 12		
MEAN	185.6	197.5**
S.D.	12.45	6.81
N	15	15
WEEK 13		
MEAN	188.1	198.6*
S.D.	13.00	8.67
N	15	15

* Significantly different from control group ($p < .05$)
** Significantly different from control group ($p < .01$)

TMOD_RPT:IPASRF.BWT

FIGURE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISHER 344 RATS
BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN VERSUS TIME
BOTH TEST BLOCKS COMBINED



* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS
SUMMARY OF BODY WEIGHT GAINS FOR BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN (GRAMS)

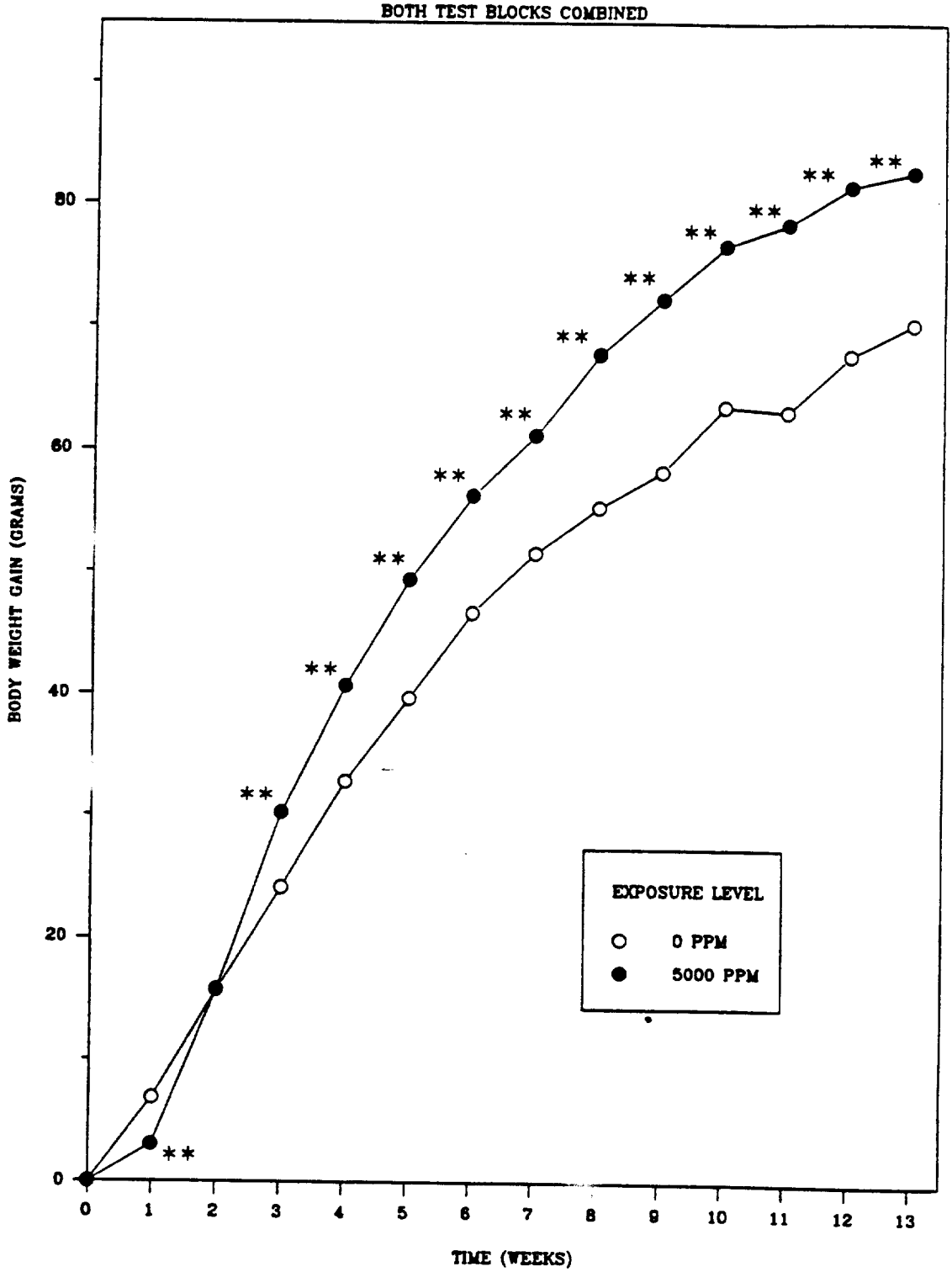
BOTH TEST BLOCKS COMBINED

GROUP: PPM	0	5000
WEEK 0 TO 1		
MEAN	6.8	3.0**
S.D.	1.84	1.89
N	30	30
WEEK 0 TO 2		
MEAN	15.7	15.8
S.D.	3.66	3.41
N	30	30
WEEK 0 TO 3		
MEAN	24.1	30.2**
S.D.	4.40	4.03
N	30	30
WEEK 0 TO 4		
MEAN	32.8	40.7**
S.D.	6.14	5.21
N	30	30
WEEK 0 TO 5		
MEAN	39.7	49.4**
S.D.	6.61	5.30
N	30	30
WEEK 0 TO 6		
MEAN	46.7	56.3**
S.D.	6.72	5.75
N	30	30
WEEK 0 TO 7		
MEAN	51.6	61.2**
S.D.	6.73	6.69
N	30	30
WEEK 0 TO 8		
MEAN	55.4	67.8**
S.D.	8.42	5.59
N	30	30
WEEK 0 TO 9		
MEAN	58.3	72.2**
S.D.	8.01	7.36
N	30	30
WEEK 0 TO 10		
MEAN	63.6	76.6**
S.D.	8.13	6.62
N	15	15
WEEK 0 TO 11		
MEAN	63.2	78.4**
S.D.	8.34	7.62
N	15	15
WEEK 0 TO 12		
MEAN	67.8	81.6**
S.D.	8.24	6.64
N	15	15
WEEK 0 TO 13		
MEAN	70.3	82.8**
S.D.	8.55	8.51
N	15	15

** Significantly different from control group (p < .01)

TMOD_RPT:IPASRF.BWT

FIGURE 2
PROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISHER 344 RATS
BODY WEIGHT GAINS FOR BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN VERSUS TIME



**Significantly different from control group ($p < 0.01$)

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
PREEXPOSURE				
MEAN	111.50	110.84	112.55	112.57
S.D.	7.459	5.120	4.196	4.736
N	15	15	15	15
WEEK 4 - 1 DAY POSTEXPOSURE				
MEAN	153.26	158.76	156.71	162.25*
S.D.	9.920	7.184	6.172	6.408
N	15	15	15	15
WEEK 7 - 1 DAY POSTEXPOSURE				
MEAN	169.95	182.23**	174.13	182.60**
S.D.	11.897	6.822	7.691	7.665
N	15	15	15	15
WEEK 9 - 1 DAY POSTEXPOSURE				
MEAN	178.30	190.17**	179.47	191.05**
S.D.	12.366	8.369	8.856	8.021
N	15	15	15	15
WEEK 9 - 2 DAYS POSTEXPOSURE				
MEAN			178.16	188.98**
S.D.			9.124	7.642
N			15	15
WEEK 10 - 4 DAYS POSTEXPOSURE				
MEAN			179.78	192.03**
S.D.			8.835	7.271
N			15	15
WEEK 10 - 7 DAYS POSTEXPOSURE				
MEAN			180.41	195.12**
S.D.			8.369	7.068
N			15	15
WEEK 11 - 1 DAY POSTEXPOSURE				
MEAN	181.80	194.41**		
S.D.	12.148	6.660		
N	15	15		
WEEK 13 - 1 DAY POSTEXPOSURE				
MEAN	191.05	200.57*		
S.D.	12.642	8.012		
N	15	15		

* Significantly different from control group ($p < 0.05$)
** Significantly different from control group ($p < 0.01$)
Statistical analyses were performed only between the 2 groups within each test block.

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

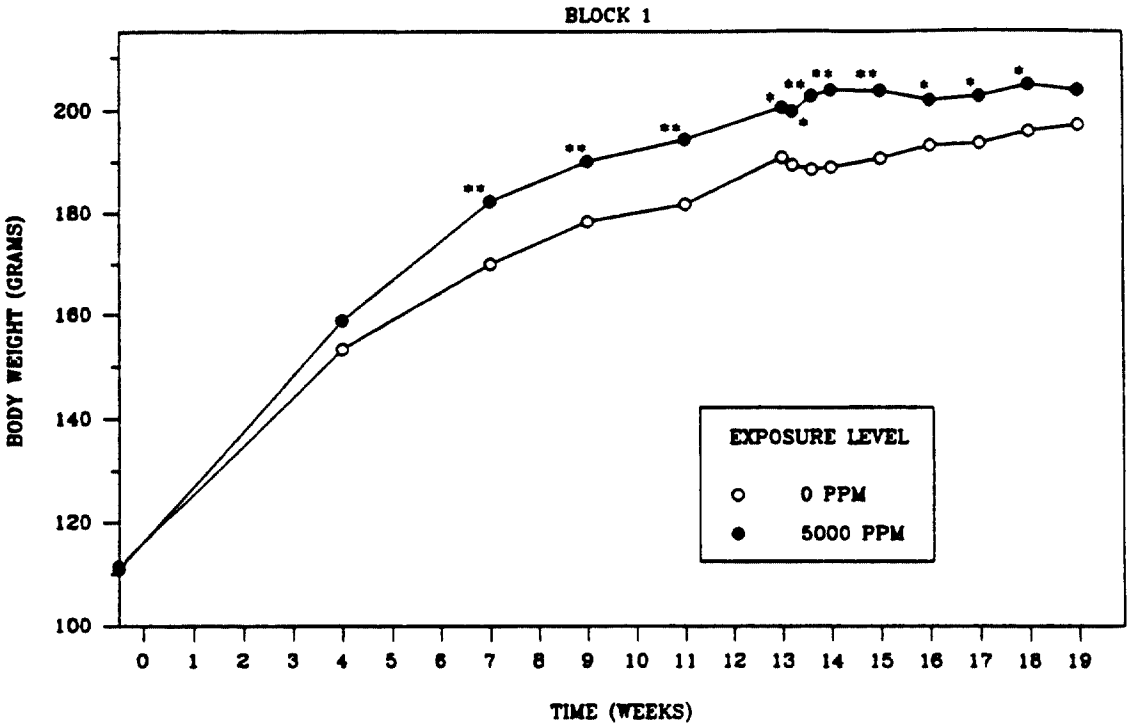
SUMMARY OF BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)

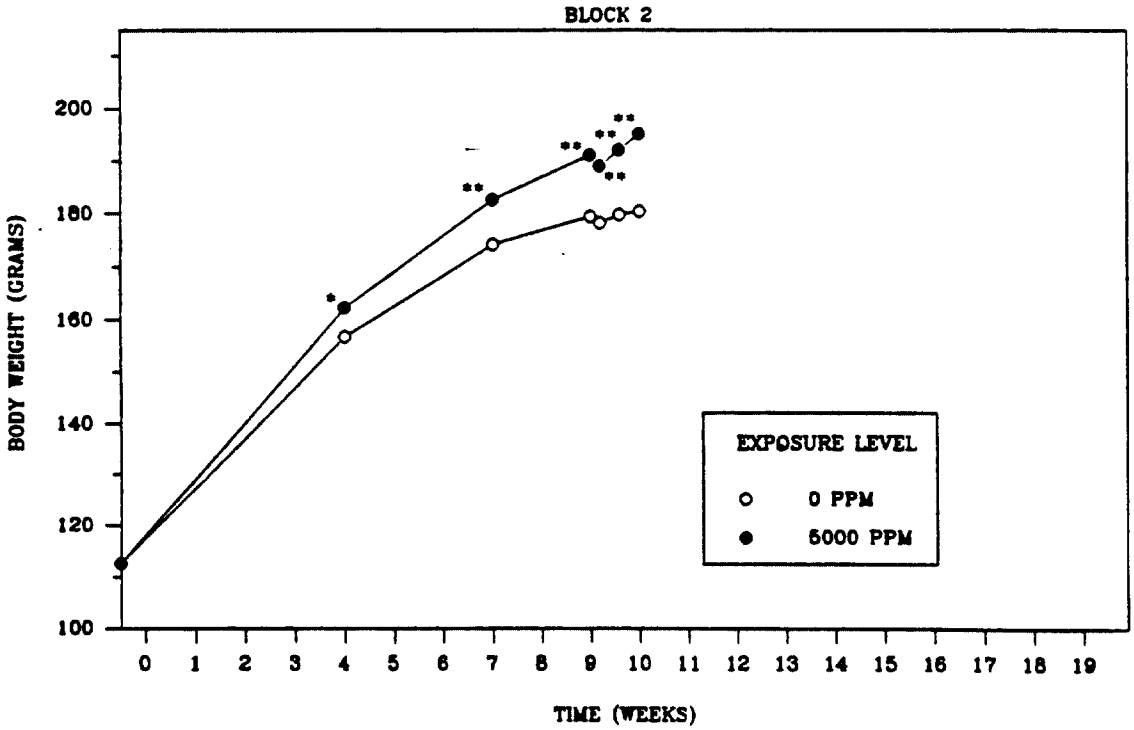
GROUP: (PPM)	BLOCK 1 0	5000
WEEK 13 - 2 DAYS POSTEXPOSURE		
MEAN	189.50	199.83*
S.D.	12.060	8.150
N	15	15
WEEK 14 - 4 DAYS POSTEXPOSURE		
MEAN	188.70	202.78**
S.D.	11.630	7.845
N	15	15
WEEK 14 - 7 DAYS POSTEXPOSURE		
MEAN	189.04	203.94**
S.D.	13.349	7.422
N	15	15
WEEK 15 - 14 DAYS POSTEXPOSURE		
MEAN	190.75	203.75**
S.D.	12.767	8.002
N	15	15
WEEK 16 - 21 DAYS POSTEXPOSURE		
MEAN	193.27	202.01*
S.D.	13.292	8.192
N	15	15
WEEK 17 - 28 DAYS POSTEXPOSURE		
MEAN	193.70	202.64*
S.D.	13.313	7.602
N	15	15
WEEK 18 - 35 DAYS POSTEXPOSURE		
MEAN	196.10	204.91*
S.D.	13.015	8.151
N	15	15
WEEK 19 - 42 DAYS POSTEXPOSURE		
MEAN	197.29	203.93
S.D.	12.152	7.767
N	15	15

*Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)

RPT_NT:IPASRF.SFO

FIGURE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISHER 344 RATS
BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING VERSUS TIME





* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF BODY WEIGHT GAINS FOR BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
PREEXPOSURE TO WEEK 4 - 1 DAY POSTEXPOSURE				
MEAN	41.76	47.92**	44.16	49.68**
S.D.	5.636	4.421	6.182	4.602
N	15	15	15	15
PREEXPOSURE TO WEEK 7 - 1 DAY POSTEXPOSURE				
MEAN	58.45	71.40**	61.58	70.04**
S.D.	7.330	5.548	7.762	5.340
N	15	15	15	15
PREEXPOSURE TO WEEK 9 - 1 DAY POSTEXPOSURE				
MEAN	66.80	79.34**	66.92	78.48**
S.D.	8.244	7.370	8.506	5.941
N	15	15	15	15
PREEXPOSURE TO WEEK 9 - 2 DAYS POSTEXPOSURE				
MEAN			65.61	76.41**
S.D.			9.115	5.919
N			15	15
PREEXPOSURE TO WEEK 10 - 4 DAYS POSTEXPOSURE				
MEAN			67.23	79.46**
S.D.			8.892	6.252
N			15	15
PREEXPOSURE TO WEEK 10 - 7 DAYS POSTEXPOSURE				
MEAN			67.86	82.55**
S.D.			8.246	6.132
N			15	15
PREEXPOSURE TO WEEK 11 - 1 DAY POSTEXPOSURE				
MEAN	70.30	83.58**		
S.D.	7.779	6.302		
N	15	15		
PREEXPOSURE TO WEEK 13 - 1 DAY POSTEXPOSURE				
MEAN	79.56	89.73**		
S.D.	8.708	7.632		
N	15	15		

**Significantly different from control group ($p < 0.01$)
Statistical analyses were performed only between the 2 groups within each test block.

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

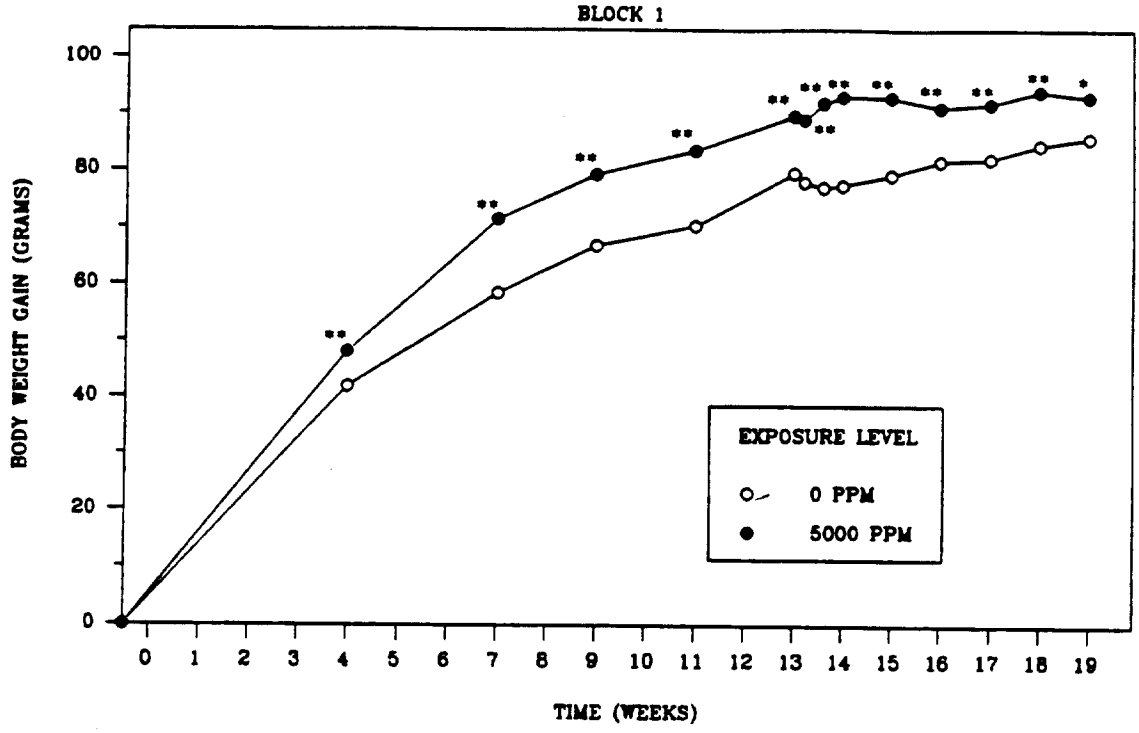
SUMMARY OF BODY WEIGHT GAINS FOR BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)

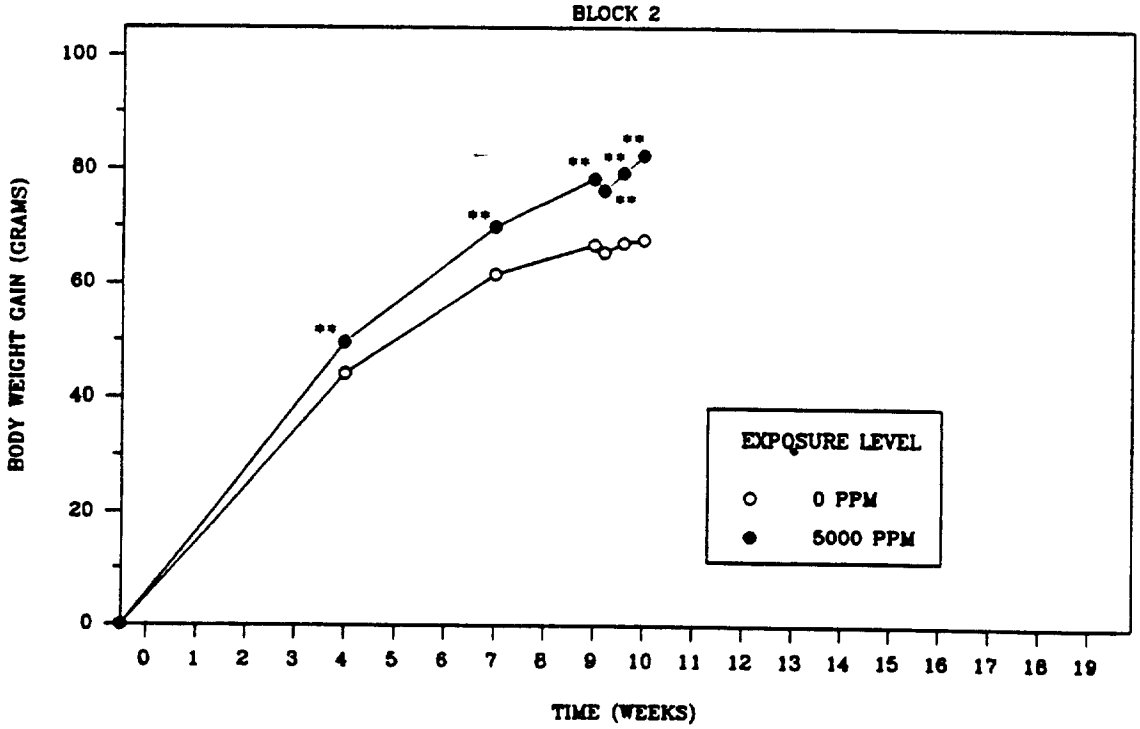
GROUP: (PPM)	BLOCK 1 0	5000
PREEXPOSURE TO WEEK 13 - 2 DAYS POSTEXPOSURE		
MEAN	78.01	88.99**
S.D.	8.314	7.805
N	15	15
PREEXPOSURE TO WEEK 14 - 4 DAYS POSTEXPOSURE		
MEAN	77.20	91.95**
S.D.	7.743	7.389
N	15	15
PREEXPOSURE TO WEEK 14 - 7 DAYS POSTEXPOSURE		
MEAN	77.54	93.10**
S.D.	8.526	7.126
N	15	15
PREEXPOSURE TO WEEK 15 - 14 DAYS POSTEXPOSURE		
MEAN	79.26	92.92**
S.D.	8.916	7.004
N	15	15
PREEXPOSURE TO WEEK 16 - 21 DAYS POSTEXPOSURE		
MEAN	81.78	91.17**
S.D.	9.927	7.033
N	15	15
PREEXPOSURE TO WEEK 17 - 28 DAYS POSTEXPOSURE		
MEAN	82.20	91.81**
S.D.	9.292	6.911
N	15	15
PREEXPOSURE TO WEEK 18 - 35 DAYS POSTEXPOSURE		
MEAN	84.60	94.08**
S.D.	8.792	6.999
N	15	15
PREEXPOSURE TO WEEK 19 - 42 DAYS POSTEXPOSURE		
MEAN	85.80	93.10*
S.D.	8.696	7.239
N	15	15

*Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)

RPT_NT:IPASRF.BWG

FIGURE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISHER 344 RATS
BODY WEIGHT GAINS FOR BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING VERSUS TIME





* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
CUMULATIVE TEST SESSION COUNTS - SUM OF ALL COUNTERS

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
PREEXPOSURE				
MEAN	933.4	965.0	679.0	758.3
S.D.	480.60	364.57	175.00	201.12
N	15	15	15	15
WEEK 4 - 1 DAY POSTEXPOSURE				
MEAN	956.1	1294.5*	1034.5	1461.5*
S.D.	229.21	420.25	354.32	589.30
N	15	15	15	15
WEEK 7 - 1 DAY POSTEXPOSURE				
MEAN	1121.0	1710.7*	1028.2	1838.9**
S.D.	445.09	733.58	237.00	805.45
N	15	15	15	15
WEEK 9 - 1 DAY POSTEXPOSURE				
MEAN	783.3	1913.6**	1049.6	1852.7**
S.D.	221.72	693.46	281.44	613.00
N	15	15	15	15
WEEK 9 - 2 DAYS POSTEXPOSURE				
MEAN			968.4	1180.6
S.D.			342.72	661.17
N			15	15
WEEK 10 - 4 DAYS POSTEXPOSURE				
MEAN			733.8	903.5
S.D.			261.30	533.40
N			15	15
WEEK 10 - 7 DAYS POSTEXPOSURE				
MEAN			678.4	734.5
S.D.			264.04	309.00
N			15	15
WEEK 11 - 1 DAY POSTEXPOSURE				
MEAN	809.5	1646.2**		
S.D.	371.43	1024.69		
N	15	15		
WEEK 13 - 1 DAY POSTEXPOSURE				
MEAN	934.9	2020.8**		
S.D.	328.52	830.73		
N	15	15		

*Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)
Statistical analyses were performed only between the 2 groups within each test block.

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
CUMULATIVE TEST SESSION COUNTS - SUM OF ALL COUNTERS

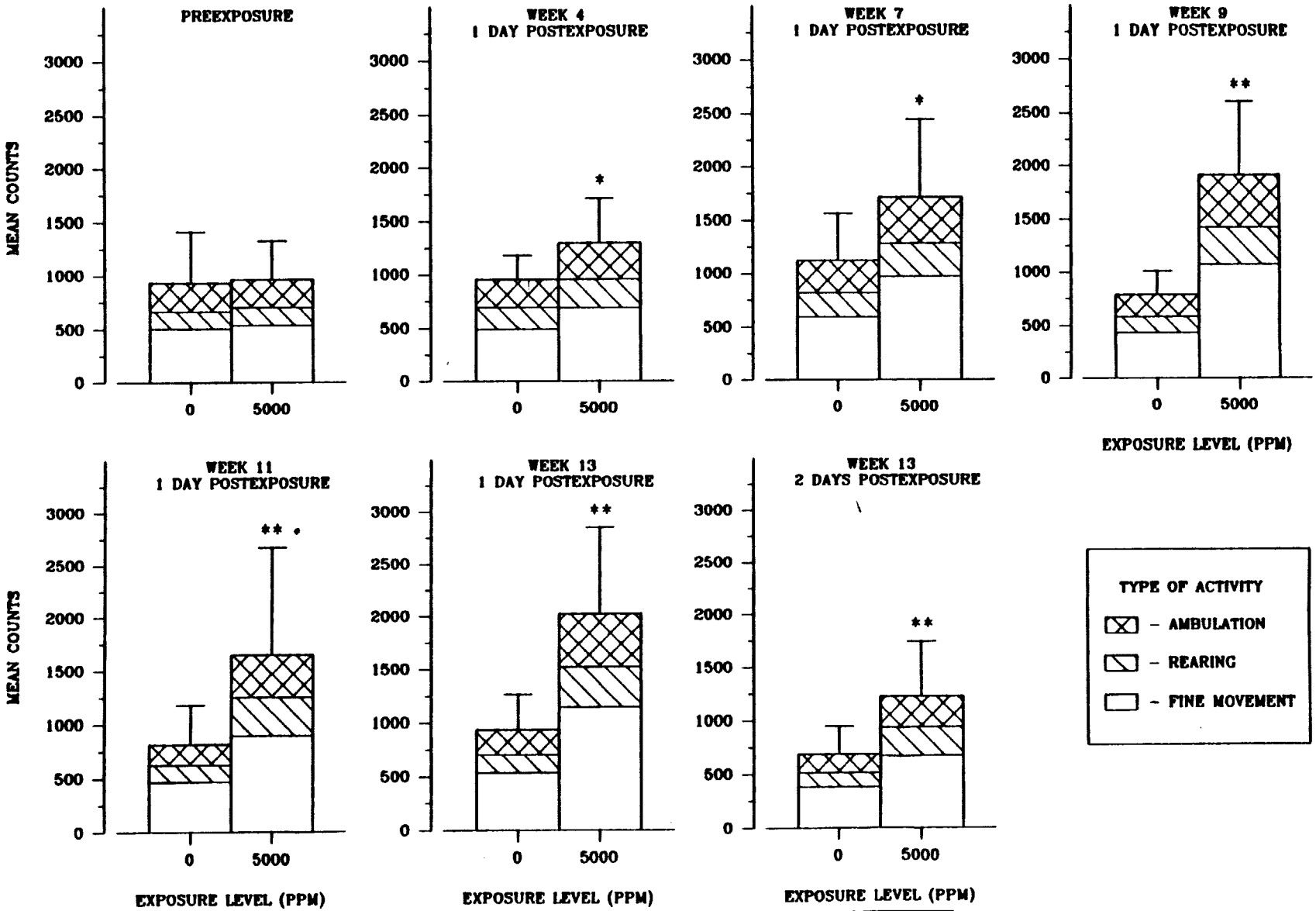
GROUP: (PPM)	BLOCK 1 0	5000
WEEK 13 - 2 DAYS POSTEXPOSURE		
MEAN	685.9	1226.7**
S.D.	261.93	514.79
N	15	15
WEEK 14 - 4 DAYS POSTEXPOSURE		
MEAN	826.9	1401.5**
S.D.	267.34	451.69
N	15	15
WEEK 14 - 7 DAYS POSTEXPOSURE		
MEAN	818.5	1128.9*
S.D.	215.52	478.50
N	15	15
WEEK 15 - 14 DAYS POSTEXPOSURE		
MEAN	1320.9	1393.6
S.D.	558.63	442.13
N	15	15
WEEK 16 - 21 DAYS POSTEXPOSURE		
MEAN	758.1	963.3
S.D.	425.82	380.47
N	15	15
WEEK 17 - 28 DAYS POSTEXPOSURE		
MEAN	955.2	1431.3*
S.D.	355.22	718.77
N	15	15
WEEK 18 - 35 DAYS POSTEXPOSURE		
MEAN	1266.9	1496.6
S.D.	455.41	635.50
N	15	15
WEEK 19 - 42 DAYS POSTEXPOSURE		
MEAN	1438.8	1510.9
S.D.	626.03	648.44
N	15	15

* Significantly different from control group ($p < 0.05$)
** Significantly different from control group ($p < 0.01$)

RPT_NT:IPASRF.SCA

FIGURE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

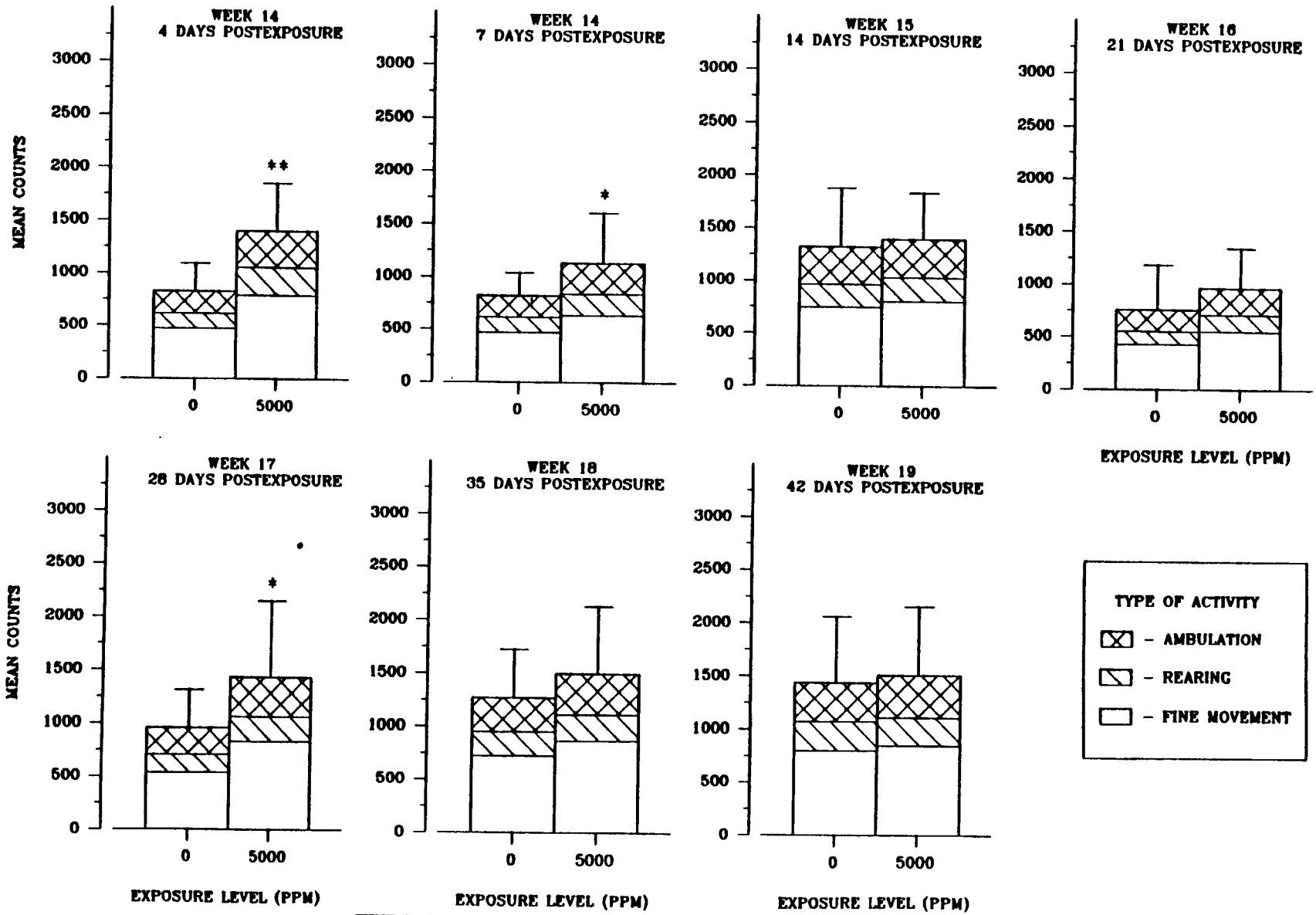
BLOCK 1 - CUMULATIVE TEST SESSION ACTIVITY VERSUS EXPOSURE LEVEL



* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)
The error bars represent the standard deviations for total activity.

FIGURE 5 (CONTINUED)
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

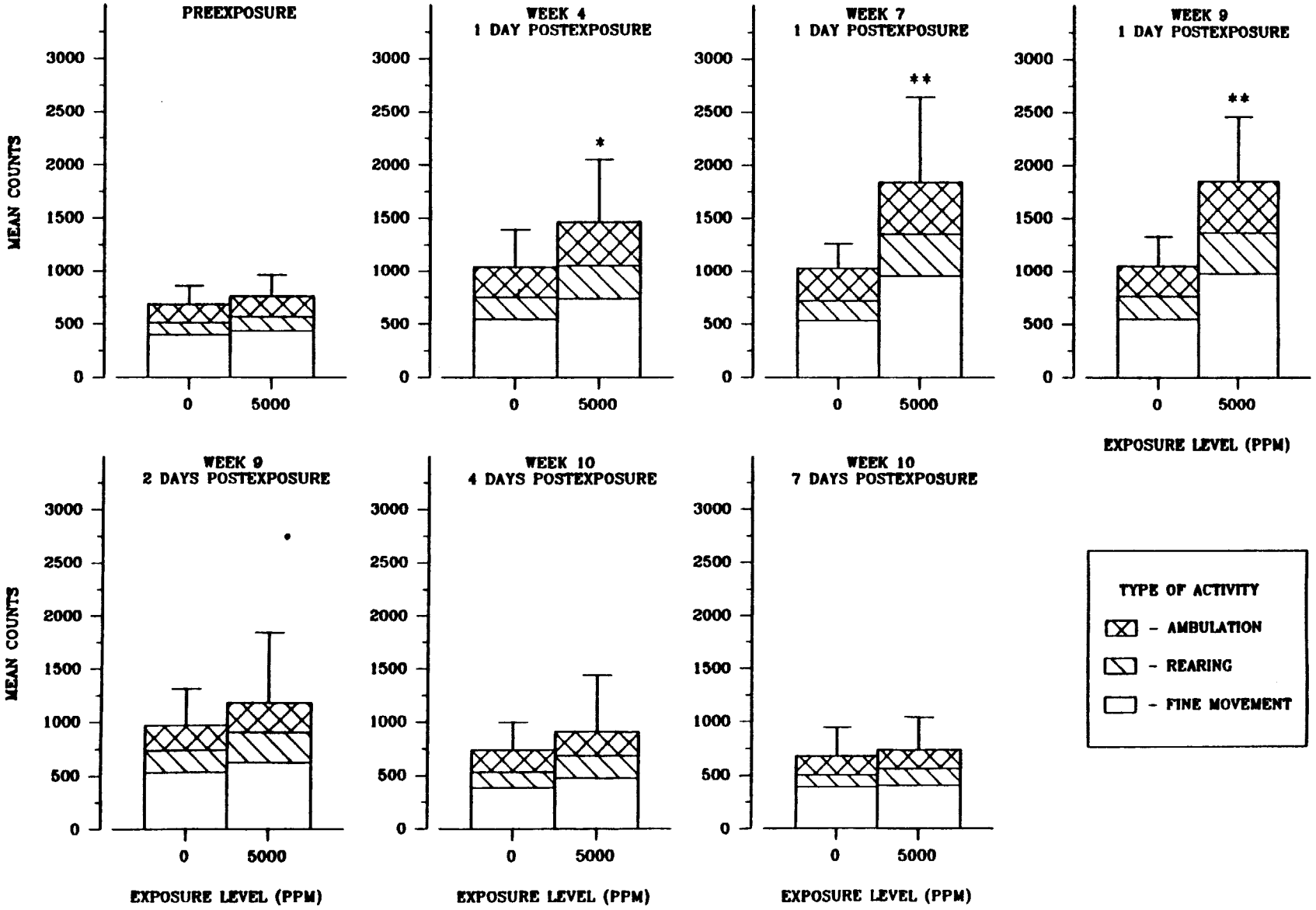
BLOCK 1 - CUMULATIVE TEST SESSION ACTIVITY VERSUS EXPOSURE LEVEL



* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)
The error bars represent the standard deviations for total activity.

FIGURE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

BLOCK 2 - CUMULATIVE TEST SESSION ACTIVITY VERSUS EXPOSURE LEVEL



* Significantly different from control group ($p < 0.05$)
** Significantly different from control group ($p < 0.01$)
The error bars represent the standard deviations for total activity.

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
PREEXPOSURE

	BLOCK 1		BLOCK 2	
GROUP: (PPM)	0	5000	0	5000
0 TO 10 MINUTES				
MEAN	300.5	326.9	303.4	315.0
S.D.	64.62	79.63	53.61	76.30
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	276.6	282.8	194.1	273.1
S.D.	120.13	112.55	98.08	100.65
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	182.9	162.1	102.5	131.3
S.D.	96.68	102.74	88.84	96.59
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	76.5	106.9	33.1	15.0
S.D.	102.43	91.22	55.20	22.35
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	41.5	47.5	13.7	3.1
S.D.	105.53	74.01	28.74	6.76
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	29.9	20.9	10.5	8.5
S.D.	77.02	18.43	24.01	9.63
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	14.7	2.9	11.9	4.2
S.D.	43.15	7.53	39.49	8.73
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	6.9	8.7	8.3	3.9
S.D.	15.49	19.13	15.26	5.04
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	4.0	6.2	1.3	4.3
S.D.	5.81	9.57	2.64	6.20
N	15	15	15	15

No statistically significant exposure level effects on the time versus activity profiles of the data were indicated.
Statistical analyses were performed only between the 2 groups within each test block.

RPT_N IPASRF1.SMA

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 4 - 1 DAY POSTEXPOSURE

	BLOCK 1		BLOCK 2	
GROUP: (PPM)	0	5000	0	5000
0 TO 10 MINUTES				
MEAN	378.8	412.3	386.9	465.0
S.D.	60.49	95.99	70.22	79.00
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	246.5	336.2	248.2	369.4
S.D.	58.14	92.98	91.65	93.93
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	165.1	231.9	201.7	259.3
S.D.	90.39	110.37	93.16	111.24
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	90.3	172.5	105.2	164.2
S.D.	101.36	120.37	89.23	120.10
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	38.2	85.9	59.7	67.1
S.D.	55.28	95.27	95.34	107.06
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	8.1	28.2	15.9	51.9
S.D.	22.89	51.64	34.37	99.07
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	2.9	8.9	4.9	29.4
S.D.	9.80	22.56	14.87	67.02
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	10.5	8.3	9.1	22.5
S.D.	25.71	16.28	30.83	53.57
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	15.7	10.3	2.9	32.5
S.D.	20.41	27.10	4.67	85.64
N	15	15	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data for block 1 was indicated.
Statistical analyses were performed only between the 2 groups within each test block.

RPT_NT:IPASRF2.SMA

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 7 - 1 DAY POSTEXPOSURE

	BLOCK 1		BLOCK 2	
GROUP: (PPM)	0	5000	0	5000
0 TO 10 MINUTES				
MEAN	412.3	483.1	421.1	578.0
S.D.	73.89	158.14	73.26	122.75
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	245.9	343.0	318.4	412.5
S.D.	77.60	115.73	66.08	105.48
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	189.9	276.1	182.8	284.0
S.D.	83.75	115.96	94.29	129.02
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	109.5	208.3	72.8	246.4
S.D.	82.89	124.19	74.72	132.83
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	70.1	165.3	16.3	95.0
S.D.	105.66	120.24	26.64	97.53
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	54.4	121.4	1.2	80.7
S.D.	96.77	124.06	2.14	136.92
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	36.1	56.4	4.0	49.3
S.D.	74.68	88.01	13.09	129.84
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	2.6	26.1	9.3	41.0
S.D.	6.81	66.58	35.06	90.14
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	.3	31.1	2.3	52.1
S.D.	.80	83.63	8.76	111.97
N	15	15	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data for block 2 was indicated.
Statistical analyses were performed only between the 2 groups within each test block.

RPT_NT:IPASRF3.SMA

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 9 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
0 TO 10 MINUTES				
MEAN	376.1	485.8	449.0	605.1
S.D.	70.53	125.03	114.40	129.98
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	209.8	360.1	247.5	382.9
S.D.	71.19	105.52	66.76	88.47
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	117.7	265.1	163.5	264.0
S.D.	92.21	69.90	83.69	121.16
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	49.8	224.1	77.8	187.3
S.D.	59.10	114.49	76.35	124.42
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	9.5	166.6	36.4	100.5
S.D.	18.84	99.90	45.98	117.55
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	10.1	152.7	17.5	114.5
S.D.	27.52	120.12	58.52	112.86
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	4.1	106.7	24.3	92.4
S.D.	14.67	104.73	78.07	140.10
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	1.1	86.7	24.7	73.7
S.D.	3.20	110.73	49.73	113.07
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	5.2	65.8	8.9	32.2
S.D.	15.40	83.93	15.66	55.42
N	15	15	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data for block 1 was indicated.
Statistical analyses were performed only between the 2 groups within each test block.

RPT_NT:IPASRF4.SMA

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 9 - 2 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 2 0	5000
0 TO 10 MINUTES		
MEAN	403.8	440.8
S.D.	60.90	145.33
N	15	15
10 TO 20 MINUTES		
MEAN	215.6	233.7
S.D.	97.05	113.28
N	15	15
20 TO 30 MINUTES		
MEAN	153.7	182.7
S.D.	117.05	154.34
N	15	15
30 TO 40 MINUTES		
MEAN	93.7	97.0
S.D.	92.20	110.61
N	15	15
40 TO 50 MINUTES		
MEAN	48.7	79.1
S.D.	80.31	111.04
N	15	15
50 TO 60 MINUTES		
MEAN	35.3	59.0
S.D.	53.69	122.88
N	15	15
60 TO 70 MINUTES		
MEAN	9.0	28.7
S.D.	15.53	55.56
N	15	15
70 TO 80 MINUTES		
MEAN	2.2	16.5
S.D.	7.70	26.92
N	15	15
80 TO 90 MINUTES		
MEAN	6.4	43.3
S.D.	12.53	60.95
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF5.SMA

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 10 - 4 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 2 0	5000
0 TO 10 MINUTES		
MEAN	420.1	498.3
S.D.	103.37	138.44
N	15	15
10 TO 20 MINUTES		
MEAN	182.3	220.7
S.D.	57.48	125.00
N	15	15
20 TO 30 MINUTES		
MEAN	53.5	92.9
S.D.	58.18	135.84
N	15	15
30 TO 40 MINUTES		
MEAN	64.3	31.7
S.D.	141.94	65.51
N	15	15
40 TO 50 MINUTES		
MEAN	10.5	25.3
S.D.	25.44	71.78
N	15	15
50 TO 60 MINUTES		
MEAN	.9	21.0
S.D.	2.84	57.53
N	15	15
60 TO 70 MINUTES		
MEAN	.0	2.7
S.D.	.00	5.05
N	15	15
70 TO 80 MINUTES		
MEAN	1.9	2.7
S.D.	6.96	7.11
N	15	15
80 TO 90 MINUTES		
MEAN	.3	8.1
S.D.	.80	26.18
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF6.SMA

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 10 - 7 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 2 0	5000
0 TO 10 MINUTES		
MEAN	354.7	449.8
S.D.	103.36	119.48
N	15	15
10 TO 20 MINUTES		
MEAN	185.8	206.9
S.D.	90.78	125.18
N	15	15
20 TO 30 MINUTES		
MEAN	97.4	64.0
S.D.	88.09	86.19
N	15	15
30 TO 40 MINUTES		
MEAN	26.5	8.5
S.D.	58.72	26.38
N	15	15
40 TO 50 MINUTES		
MEAN	9.7	1.3
S.D.	36.89	4.91
N	15	15
50 TO 60 MINUTES		
MEAN	1.0	2.1
S.D.	2.45	5.19
N	15	15
60 TO 70 MINUTES		
MEAN	2.1	.5
S.D.	7.73	1.06
N	15	15
70 TO 80 MINUTES		
MEAN	.1	.7
S.D.	.26	1.84
N	15	15
80 TO 90 MINUTES		
MEAN	1.2	.9
S.D.	4.38	3.09
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF7.SMA

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 11 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	326.5	462.0
S.D.	78.29	138.62
N	15	15
10 TO 20 MINUTES		
MEAN	160.3	292.1
S.D.	71.25	137.53
N	15	15
20 TO 30 MINUTES		
MEAN	111.1	264.7
S.D.	80.77	136.41
N	15	15
30 TO 40 MINUTES		
MEAN	81.3	183.5
S.D.	72.96	160.48
N	15	15
40 TO 50 MINUTES		
MEAN	55.1	160.6
S.D.	76.94	148.02
N	15	15
50 TO 60 MINUTES		
MEAN	37.3	122.1
S.D.	78.45	155.64
N	15	15
60 TO 70 MINUTES		
MEAN	19.2	81.7
S.D.	43.89	142.56
N	15	15
70 TO 80 MINUTES		
MEAN	11.3	39.3
S.D.	26.89	82.74
N	15	15
80 TO 90 MINUTES		
MEAN	7.3	40.3
S.D.	13.24	89.28
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF8.SMA

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 13 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	363.4	479.5
S.D.	75.05	149.75
N	15	15
10 TO 20 MINUTES		
MEAN	175.5	301.1
S.D.	77.45	108.72
N	15	15
20 TO 30 MINUTES		
MEAN	148.3	275.1
S.D.	80.03	93.65
N	15	15
30 TO 40 MINUTES		
MEAN	79.2	208.4
S.D.	70.42	94.05
N	15	15
40 TO 50 MINUTES		
MEAN	53.5	190.1
S.D.	69.03	156.13
N	15	15
50 TO 60 MINUTES		
MEAN	28.4	166.1
S.D.	50.11	121.93
N	15	15
60 TO 70 MINUTES		
MEAN	24.4	133.8
S.D.	43.75	107.11
N	15	15
70 TO 80 MINUTES		
MEAN	50.3	151.2
S.D.	82.11	114.04
N	15	15
80 TO 90 MINUTES		
MEAN	12.0	115.5
S.D.	22.94	103.91
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF9.SMA

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 13 - 2 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	359.3	436.8
S.D.	114.95	122.55
N	15	15
10 TO 20 MINUTES		
MEAN	177.5	261.4
S.D.	90.00	108.72
N	15	15
20 TO 30 MINUTES		
MEAN	87.7	156.9
S.D.	75.02	90.22
N	15	15
30 TO 40 MINUTES		
MEAN	24.6	115.0
S.D.	35.58	129.18
N	15	15
40 TO 50 MINUTES		
MEAN	7.6	60.9
S.D.	24.24	65.49
N	15	15
50 TO 60 MINUTES		
MEAN	10.9	28.5
S.D.	35.35	47.97
N	15	15
60 TO 70 MINUTES		
MEAN	3.6	39.7
S.D.	8.87	78.70
N	15	15
70 TO 80 MINUTES		
MEAN	12.5	87.3
S.D.	24.39	96.01
N	15	15
80 TO 90 MINUTES		
MEAN	2.2	40.2
S.D.	5.80	58.75
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF10.SMA

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 14 - 4 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	386.4	530.3
S.D.	87.43	115.64
N	15	15
10 TO 20 MINUTES		
MEAN	219.9	330.7
S.D.	63.86	87.96
N	15	15
20 TO 30 MINUTES		
MEAN	122.0	201.3
S.D.	61.76	100.19
N	15	15
30 TO 40 MINUTES		
MEAN	50.9	144.2
S.D.	71.99	111.44
N	15	15
40 TO 50 MINUTES		
MEAN	18.1	89.9
S.D.	32.02	114.99
N	15	15
50 TO 60 MINUTES		
MEAN	11.3	42.3
S.D.	33.51	78.77
N	15	15
60 TO 70 MINUTES		
MEAN	10.9	11.7
S.D.	37.97	15.55
N	15	15
70 TO 80 MINUTES		
MEAN	.1	23.3
S.D.	.52	55.32
N	15	15
80 TO 90 MINUTES		
MEAN	7.2	27.9
S.D.	16.15	43.63
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF11.SMA

TABLE 18
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 14 - 7 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	362.9	479.5
S.D.	70.70	113.03
N	15	15
10 TO 20 MINUTES		
MEAN	218.1	272.5
S.D.	53.59	135.69
N	15	15
20 TO 30 MINUTES		
MEAN	122.4	186.2
S.D.	79.33	159.82
N	15	15
30 TO 40 MINUTES		
MEAN	67.9	71.2
S.D.	68.82	76.88
N	15	15
40 TO 50 MINUTES		
MEAN	24.2	43.6
S.D.	37.34	82.29
N	15	15
50 TO 60 MINUTES		
MEAN	8.0	51.8
S.D.	21.77	81.13
N	15	15
60 TO 70 MINUTES		
MEAN	8.4	15.9
S.D.	29.60	30.90
N	15	15
70 TO 80 MINUTES		
MEAN	6.0	7.3
S.D.	22.15	15.89
N	15	15
80 TO 90 MINUTES		
MEAN	.6	1.1
S.D.	1.24	3.20
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated. However, a statistically significant exposure level effect on the time versus activity profiles of the ambulation data was indicated.

RPT_NT:IPASRF12.SMA

TABLE 19
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 15 - 14 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	424.8	539.0
S.D.	86.34	119.98
N	15	15
10 TO 20 MINUTES		
MEAN	255.5	282.6
S.D.	75.84	71.86
N	15	15
20 TO 30 MINUTES		
MEAN	197.0	216.3
S.D.	83.26	86.62
N	15	15
30 TO 40 MINUTES		
MEAN	159.1	175.0
S.D.	128.19	114.56
N	15	15
40 TO 50 MINUTES		
MEAN	105.7	99.7
S.D.	119.69	111.06
N	15	15
50 TO 60 MINUTES		
MEAN	75.5	30.8
S.D.	107.31	48.28
N	15	15
60 TO 70 MINUTES		
MEAN	54.5	5.6
S.D.	73.62	10.93
N	15	15
70 TO 80 MINUTES		
MEAN	23.1	1.4
S.D.	48.60	4.17
N	15	15
80 TO 90 MINUTES		
MEAN	25.8	43.2
S.D.	42.26	47.59
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF13.SMA

TABLE 20
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 16 - 21 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	387.6	485.6
S.D.	86.48	146.52
N	15	15
10 TO 20 MINUTES		
MEAN	183.6	276.7
S.D.	115.02	143.36
N	15	15
20 TO 30 MINUTES		
MEAN	95.5	132.2
S.D.	103.97	106.56
N	15	15
30 TO 40 MINUTES		
MEAN	53.1	46.3
S.D.	89.61	52.71
N	15	15
40 TO 50 MINUTES		
MEAN	22.2	14.5
S.D.	57.43	27.38
N	15	15
50 TO 60 MINUTES		
MEAN	9.4	1.0
S.D.	32.46	2.45
N	15	15
60 TO 70 MINUTES		
MEAN	2.0	2.7
S.D.	3.46	6.69
N	15	15
70 TO 80 MINUTES		
MEAN	4.3	3.4
S.D.	15.43	12.63
N	15	15
80 TO 90 MINUTES		
MEAN	.5	1.0
S.D.	1.55	2.83
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF14.SMA

TABLE 21
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 17 - 28 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	431.9	506.7
S.D.	83.46	119.13
N	15	15
10 TO 20 MINUTES		
MEAN	179.9	284.8
S.D.	55.27	81.09
N	15	15
20 TO 30 MINUTES		
MEAN	154.7	233.5
S.D.	93.72	118.36
N	15	15
30 TO 40 MINUTES		
MEAN	77.3	109.1
S.D.	78.84	106.52
N	15	15
40 TO 50 MINUTES		
MEAN	57.3	77.0
S.D.	90.75	98.05
N	15	15
50 TO 60 MINUTES		
MEAN	14.6	68.6
S.D.	25.96	108.82
N	15	15
60 TO 70 MINUTES		
MEAN	31.2	110.3
S.D.	72.07	181.68
N	15	15
70 TO 80 MINUTES		
MEAN	5.7	20.6
S.D.	12.22	44.26
N	15	15
80 TO 90 MINUTES		
MEAN	2.7	20.7
S.D.	10.33	38.50
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF15.SMA

TABLE 22
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 18 - 35 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	394.4	561.0
S.D.	87.41	148.03
N	15	15
10 TO 20 MINUTES		
MEAN	253.1	309.1
S.D.	60.99	93.99
N	15	15
20 TO 30 MINUTES		
MEAN	182.7	210.3
S.D.	76.67	86.72
N	15	15
30 TO 40 MINUTES		
MEAN	137.3	134.5
S.D.	98.47	108.57
N	15	15
40 TO 50 MINUTES		
MEAN	62.5	57.7
S.D.	71.32	55.18
N	15	15
50 TO 60 MINUTES		
MEAN	73.7	78.7
S.D.	67.25	97.14
N	15	15
60 TO 70 MINUTES		
MEAN	64.3	60.9
S.D.	66.60	74.54
N	15	15
70 TO 80 MINUTES		
MEAN	60.4	53.4
S.D.	98.38	104.41
N	15	15
80 TO 90 MINUTES		
MEAN	38.6	31.1
S.D.	59.67	44.09
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF16.SMA

TABLE 23
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 19 - 42 DAYS POSTEXPOSURE

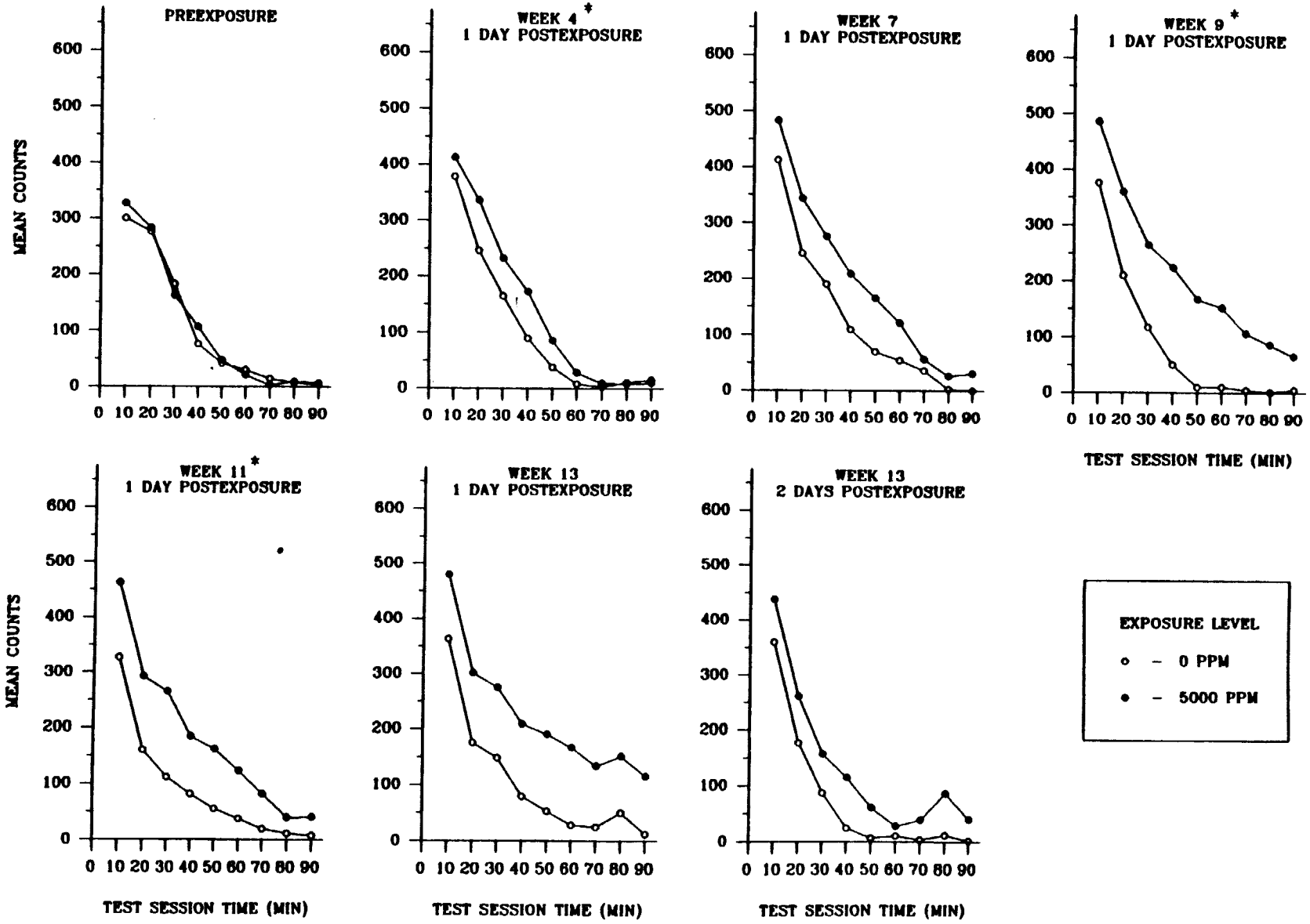
GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	458.1	526.5
S.D.	91.93	144.95
N	15	15
10 TO 20 MINUTES		
MEAN	290.1	301.7
S.D.	101.48	94.91
N	15	15
20 TO 30 MINUTES		
MEAN	226.6	268.7
S.D.	102.48	102.90
N	15	15
30 TO 40 MINUTES		
MEAN	175.2	175.1
S.D.	115.81	140.30
N	15	15
40 TO 50 MINUTES		
MEAN	144.0	135.1
S.D.	148.42	145.54
N	15	15
50 TO 60 MINUTES		
MEAN	61.5	46.5
S.D.	88.81	36.94
N	15	15
60 TO 70 MINUTES		
MEAN	47.5	35.5
S.D.	75.21	86.17
N	15	15
70 TO 80 MINUTES		
MEAN	16.3	19.1
S.D.	36.63	31.95
N	15	15
80 TO 90 MINUTES		
MEAN	19.5	2.6
S.D.	43.30	5.96
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPAS[illegible]7.SMA

FIGURE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

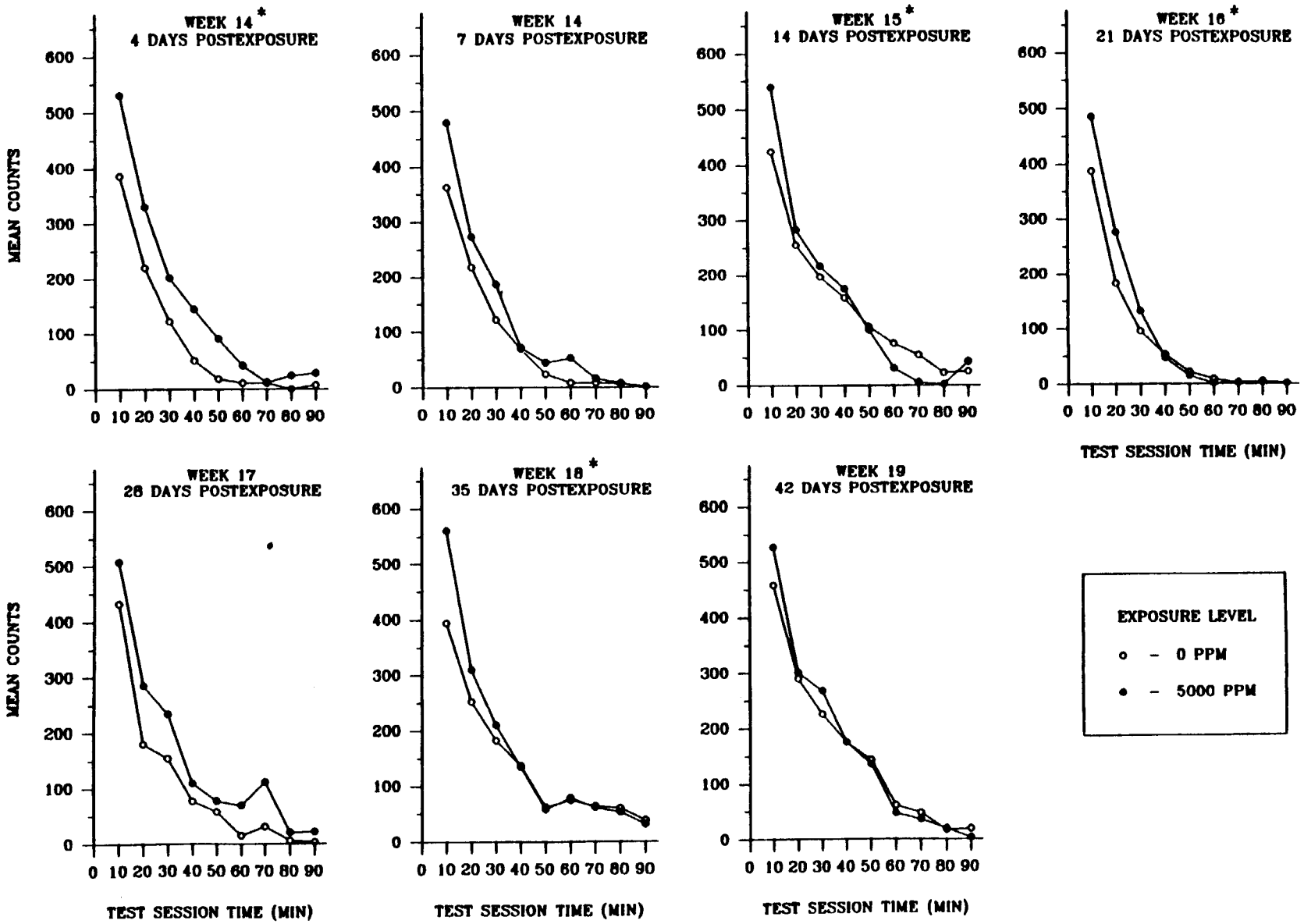
BLOCK 1 - TEST SESSION ACTIVITY VERSUS TIME, SUM OF ALL COUNTERS



* A statistically significant exposure level effect on the time versus activity profile of the data was indicated at this test period.

FIGURE 7 (CONTINUED)
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

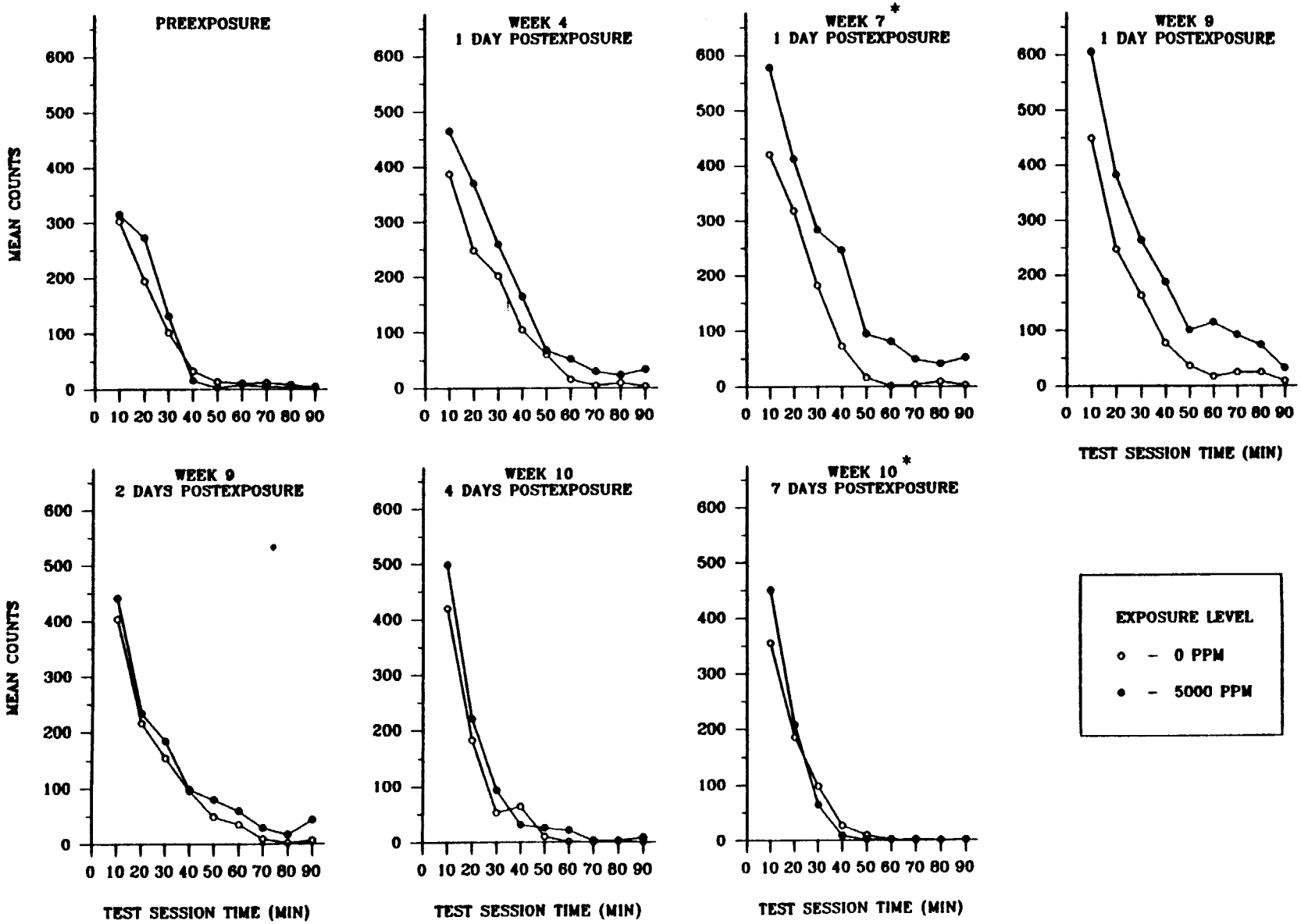
BLOCK 1 - TEST SESSION ACTIVITY VERSUS TIME, SUM OF ALL COUNTERS



* A statistically significant exposure level effect on the time versus activity profile of the data was indicated at this test period.

FIGURE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

BLOCK 2 - TEST SESSION ACTIVITY VERSUS TIME, SUM OF ALL COUNTERS



* A statistically significant exposure level effect on the time versus activity profile of the data was indicated at this test period.

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

QUALITY ASSURANCE UNIT INSPECTION SUMMARY

Inspection Date(s)	Inspection Type	Date QAU Report Issued To Study Director	Date QAU Report Issued To Management
03-19-93 to 03-22-93	PROTOCOL	03-24-93	04-05-93
05-05-93	EVENT-ANIMAL RECEIPT	05-05-93	09-10-93
06-04-93	EVENT-BODY WEIGHTS	06-04-93	09-10-93
06-30-93	EVENT-EXPOSURE	07-01-93	09-10-93
08-05-93	PROTOCOL AMENDMENT #1	08-05-93	08-17-93
11-08-93	PROTOCOL AMENDMENT #2	11-08-93	11-15-93
02-11-94 to 03-15-94	ANALYTICAL CHEMISTRY DATA, REPORT	03-15-94	05-05-94
02-11-94 to 03-15-94	RAW DATA, REPORT	03-15-94	05-05-94
05-05-94	ARCHIVES	05-05-94	05-05-94

Linda J. Calisti 5/5/94

Linda J. Calisti, Manager — Date

Good Laboratory Practices/Quality Assurance

ARCH_DOC\93N1245\93N1245.QAU

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Chamber Atmosphere Report

(32 Pages)

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Chamber Atmosphere Report

SUMMARY

The concentration of isopropanol (IPA) vapor in the exposure chamber was monitored throughout the 64 days of exposure by flame ionization gas chromatography. The concentration in each exposure chamber atmosphere was determined approximately 10 times during each 6-hour exposure. The overall mean (± standard deviation) chamber atmosphere concentration was 5011 (± 105) ppm, for the target concentration of 5000 ppm. IPA was not detected in the control chamber atmosphere.

The test substance was analyzed before and after the exposure regimen and remained over 99.9% pure.

The uniformity of IPA vapor concentration in the exposure chamber was examined. The chamber was tested once prior to the start of the exposure regimen. Concentrations were measured at 5 positions for the distribution test. These concentrations were representative of a uniform vapor distribution as indicated by a low coefficient of variation (CV) value of 0.3%. Furthermore, the results indicate that the analytical sampling position was properly located within the chamber such that sampling results were representative of IPA concentration in the breathing zones of the animals.

MATERIALS AND METHODS

Test Substance

Two 55-gallon drums of isopropanol (BRRC Nos. 56-127A and B, CAS No. 67-63-0, Lot No. TK-1543 4/15/93) were received from Union Carbide Corporation (UCC; Texas City, TX) on April 26, 1993. The chemical and physical properties of the test substance are described in Table 1. The compositional analyses were provided by the GLP Analytical Skill Center at the UCC South Charleston, WV, Technical Center. A summary of this report is presented in Table 2; the entire report is presented as Attachment 1. These compositional analyses indicated that the test substance was over 99.9% pure and had remained stable for the duration of the exposure regimen.

Test Substance Generation

The methods used to generate IPA vapor in the exposure chamber are described in the text of the main report.

Chamber Distribution Setup

The uniformity of IPA vapor concentration in the exposure chamber was examined. The chamber was tested once prior to the start of the exposure regimen. Concentrations were measured at 5 positions for the test. The distribution test simulated actual animal exposures, including the use of similar animal cages, cage carriers with collection trays, and airflow rate. No animals were present in the exposure chambers. The positions of the sampling probes within the chambers are described in Table 6. One of these positions was the analytical probe position. The analytical sampling consisted of 3 cycles, each cycle requiring approximately 30 minutes to complete. Since the chamber concentrations may vary slightly with time, the data from the 3 cycles (Table 7) were averaged to eliminate time-dependent concentration variations. Also, the sampling occurred after the equilibration of chamber concentration (t_{99}) had been obtained.

Analytical Instrumentation

A Perkin-Elmer Sigma 2000 gas chromatograph (GC) equipped with a flame ionization detector was used to analyze the IPA exposure chamber atmospheres. The GC operating conditions are presented in Table 3. A Spectra-Physics ChromJet Integrator provided a record of the chromatograms and chromatographic analyses as well as peak integration. The data were captured using an IBM PS/2 Computer with Spectra-Physics Chromstation/2 software. In-house software was used to compute daily statistics and also to provide an alarm system which monitored chamber concentrations.

Calibration

Calibration of the gas chromatograph was achieved by injecting gas standards, which were prepared by syringe injection of IPA into Tedlar™ gas bags containing air. These standards were prepared using the mathematical relationship:

$$V = \frac{C \times V_h \times MW \times 298 \times P \times 10^{-6}}{d \times 24.45 \times T \times 760}$$

where: V = required volume of calibration liquid in milliliters at temperature T (degrees K)
C = desired calibration concentration, in ppm
V_h = volume of container, in liters
MW = molecular weight of the calibration liquid
P = barometric pressure, in millimeters of mercury
d = density of the calibration liquid in g/ml at temperature T
24.45 = molecular volume at 298 degrees K and 760 millimeters of mercury, in liters
T = temperature, in degrees Kelvin

The calibration curve (Figure 1) was constructed by plotting peak areas versus the gas standard concentrations. The calibration was checked at least once each week during the exposure regimen.

RESULTS AND DISCUSSION

Chamber Atmosphere Analysis

Each chamber atmosphere was analyzed for IPA approximately twice each hour during each 6-hour exposure by flame ionization gas chromatography. The daily mean analytical concentrations are listed in Tables 4 and 5. The mean of daily mean chamber atmosphere concentrations (± standard deviations) was 5011 (± 105) ppm, for the target concentration of 5000 ppm. No concentration of IPA above the estimated minimum detection limit of 10 ppm was detected in the control chamber atmosphere.

Analytical/Nominal Concentration Ratio

The daily analytical/nominal (A/NOM) IPA concentration ratios are given in Table 5. The nominal concentration is an estimate calculated from the quantity of IPA delivered and the chamber airflow rate. The overall mean A/NOM concentration ratio was 1.06 for the IPA target concentration of 5000 ppm.

Temperature and Relative Humidity

The daily mean temperature and relative humidity values for the exposure chambers are presented in Tables 4 and 5. The means of daily mean temperature values were 20.5 and 20.3°C, for IPA target concentrations of 0 and 5000 ppm, respectively. The means of daily mean relative humidity values were 52 and 53%, respectively.

Chamber Distribution

The uniformity of IPA vapor concentration distribution in the exposure chamber was examined. The results and the statistical summaries are presented in Table 7. The concentrations were representative of a uniform vapor distribution as indicated by a low coefficient of variation (CV) value of 0.3%. Furthermore, the results indicate that the analytical sampling position was properly located within the chamber such that sampling results were representative of IPA concentrations in the breathing zones of the animals.

Analytical Chemist: Irvin M. Pritts 5-9-94

Irvin M. Pritts, Ph.D. Date

INHALVANALYT\AIPA_SV
April 27, 1994

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

CHEMICAL AND PHYSICAL PROPERTIES[1]

Synonyms:	Isopropyl Alcohol
Molecular Weight:	60.10
Molecular Formula:	$(CH_3)_2CHOH$
Vapor Density (air = 1)	2.07
Appearance and Odor:	Colorless liquid; characteristic odor
Boiling Point, 760 mm Hg:	82.26°C
Solubility in Water:	Complete at 20°C
Evaporation Rate (butyl acetate = 1):	2.88
Vapor Pressure at 20°C:	33 mm Hg
Specific Gravity (H_2O = 1):	0.7864 @ 20/20°C
Flash Point (Tag Closed Cup):	12°C

[1]Material Safety Data Sheet, Union Carbide Chemicals and Plastics Company Inc., Revised 02/24/93.

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

TEST SUBSTANCE ANALYSIS[1]

	Prestudy Area %	Poststudy Area %
Isopropanol (approx.)	99.98	99.99
Impurities	0.02	0.01

[1]The capillary gas chromatographic compositional analyses were provided by the GLP Analytical Skill Center at the UCC South Charleston, WV, Technical Center. In addition, gas chromatography-mass spectrometry and nuclear magnetic resonance spectroscopy were independently used to confirm the sample's identity.

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

GAS CHROMATOGRAPH OPERATING PARAMETERS

Chromatograph:	Perkin-Elmer Sigma 2000
Detector:	Flame Ionization
Column:	SPB-1, 1μM, 30 m x 0.75 mm glass capillary
Column temperature:	100°C
Injector temperature:	100°C gas sample valve
Detector temperature:	250°C
Carrier flow rate:	8.0 mL/minute nitrogen
Sample size:	0.1 cc
Retention time:	1.6 minutes
GC attenuation:	Range = 100
Minimum detection limit:	Approximately 10 ppm
Integrator attenuation:	256

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

CHAMBER ATMOSPHERE DATA
0 PPM (CONTROL) CHAMBER

Exposure Day	TEMP (°C)	RH (%)	A (ppm)
1	19.5	48.8	<MDL
2	20.0	46.3	<MDL
3	20.7	48.9	<MDL
4	19.7	48.3	<MDL
5	20.0	49.3	<MDL
6	20.0	50.2	<MDL
7	20.0	50.8	<MDL
8	19.9	50.6	<MDL
9	20.0	50.7	<MDL
10	20.5	50.4	<MDL
11	20.4	53.2	<MDL
12	21.0	54.5	<MDL
13	20.6	53.7	<MDL
14	21.0	53.3	<MDL
15	20.2	50.8	<MDL
16	20.6	52.8	<MDL
17	20.5	51.2	<MDL
18	21.0	51.2	<MDL
19	21.0	53.4	<MDL
20	21.0	49.8	<MDL
21	20.5	50.5	<MDL
22	21.0	48.2	<MDL
23	20.0	50.1	<MDL
24	20.9	52.5	<MDL
25	20.3	52.8	<MDL
26	21.0	52.8	<MDL
27	21.0	52.3	<MDL
28	20.1	52.0	<MDL
29	21.0	54.5	<MDL
30	20.8	53.8	<MDL
31	21.6	54.3	<MDL
32	21.6	54.6	<MDL
33	21.8	54.4	<MDL
34	21.5	55.2	<MDL

TEMP = temperature (daily mean)
RH = relative humidity (daily mean)
A = analytical concentration (daily mean)
SD = standard deviation
<MDL = less than the estimated minimum detection limit of 10 ppm

TABLE 4 (CONTINUED)
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

CHAMBER ATMOSPHERE DATA
0 PPM (CONTROL) CHAMBER

Exposure Day	TEMP (°C)	RH (%)	A (ppm)
35	20.8	55.4	<MDL
36	20.8	55.0	<MDL
37	20.5	55.5	<MDL
38	20.8	53.2	<MDL
39	19.9	50.3	<MDL
40	21.9	54.3	<MDL
41	21.0	53.2	<MDL
42	20.3	52.5	<MDL
43	20.6	50.8	<MDL
44	20.8	50.4	<MDL
45	20.4	54.3	<MDL
46	20.8	55.5	<MDL
47	20.8	57.2	<MDL
48	20.0	51.8	<MDL
49	19.8	50.8	<MDL
50	20.0	52.0	<MDL
51	20.0	52.0	<MDL
52	20.0	51.8	<MDL
53	20.8	51.6	<MDL
54	20.8	49.2	<MDL
55	20.0	50.6	<MDL
56	20.0	51.2	<MDL
57	20.0	51.7	<MDL
58	20.0	52.8	<MDL
59	20.2	52.4	<MDL
60	20.6	51.8	<MDL
61	20.8	53.0	<MDL
62	20.0	55.2	<MDL
63	20.0	53.1	<MDL
64	20.4	52.4	<MDL
Mean:	20.5	52.1	<MDL
SD:	0.53	2.12	—

TEMP = temperature (daily mean)
RH = relative humidity (daily mean)
A = analytical concentration (daily mean)
SD = standard deviation
<MDL = less than the estimated minimum detection limit of 10 ppm

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

CHAMBER ATMOSPHERE DATA
5000 PPM CHAMBER

Exposure Day	TEMP (°C)	RH (%)	A (ppm)	±SD	NOM (ppm)	A/NOM
1	20.0	50.5	5002	37	4832	1.04
2	20.0	49.8	5030	27	4799	1.05
3	20.0	49.8	5035	35	4835	1.04
4	19.6	49.3	5049	60	4799	1.05
5	20.0	50.4	5111	43	4859	1.05
6	20.1	50.5	5136	31	4818	1.07
7	20.0	50.9	5105	52	4787	1.07
8	20.0	52.0	5132	217	4801	1.07
9	20.0	52.0	5187	39	4799	1.08
10	20.1	51.2	5052	47	4782	1.05
11	20.1	54.5	4925	45	4752	1.04
12	21.0	55.2	4901	22	4769	1.03
13	20.2	55.2	4905	35	4787	1.02
14	21.0	53.8	4934	65	4798	1.03
15	20.4	49.8	4877	38	4756	1.02
16	20.1	52.8	4926	60	4740	1.04
17	20.1	49.8	5034	53	4773	1.05
18	20.6	49.9	5052	47	4796	1.05
19	21.1	52.0	4929	33	4797	1.03
20	21.0	52.2	4699	57	4595	1.02
21	20.6	51.6	4859	33	4594	1.06
22	20.5	51.8	4913	28	4606	1.07
23	20.1	53.1	5190	58	4748	1.09
24	21.0	56.7	5178	57	4744	1.09
25	20.2	56.4	5140	44	4744	1.08
26	20.2	56.3	5121	112	4757	1.08
27	20.2	55.2	5187	47	4722	1.10
28	21.0	56.9	5200	46	4716	1.10
29	20.9	58.8	5268	63	4699	1.12
30	20.5	58.2	5087	54	4761	1.07
31	20.9	58.6	4997	96	4731	1.06
32	21.2	56.9	4958	37	4734	1.05
33	20.7	56.0	4977	92	4730	1.05
34	20.5	57.5	5114	40	4716	1.08

TEMP = temperature (daily mean)
RH = relative humidity (daily mean)
A = analytical concentration (daily mean)
SD = standard deviation
NOM = nominal concentration
<MDL = less than the estimated minimum detection limit of 10 ppm

TABLE 5 (CONTINUED)
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

CHAMBER ATMOSPHERE DATA
5000 PPM CHAMBER

Exposure Day	TEMP (°C)	RH (%)	A (ppm)	±SD	NOM (ppm)	A/NOM
35	20.5	57.3	5069	71	4755	1.07
36	20.8	55.2	4890	56	4718	1.04
37	20.6	57.9	4974	51	4729	1.05
38	20.0	54.2	4928	39	4616	1.07
39	20.8	50.6	5025	43	4731	1.06
40	21.6	55.8	4920	139	4686	1.05
41	21.0	53.6	4998	39	4717	1.06
42	20.0	53.4	4989	31	4716	1.06
43	20.0	49.5	5006	47	4716	1.06
44	20.0	50.1	5064	74	4771	1.06
45	20.1	54.6	5083	50	4736	1.07
46	21.0	55.3	4986	52	4687	1.06
47	20.2	58.3	4918	40	4668	1.05
48	20.0	52.0	4973	52	4669	1.07
49	19.2	51.5	5077	26	4703	1.08
50	20.0	51.3	4847	80	4637	1.05
51	20.0	51.3	5041	32	4726	1.07
52	20.0	51.6	4888	70	4677	1.05
53	20.0	50.2	5030	19	4718	1.07
54	21.0	49.8	4973	29	4687	1.06
55	20.0	50.2	4937	45	4694	1.05
56	20.0	52.4	5001	52	4686	1.07
57	20.0	52.4	4873	24	4665	1.04
58	20.2	51.3	4964	49	4727	1.05
59	20.0	53.8	4886	65	4722	1.03
60	20.0	53.3	4979	24	4717	1.04
61	19.9	55.5	4999	58	4718	1.06
62	20.3	53.6	4978	30	4713	1.06
63	20.0	53.1	5111	48	4726	1.08
64	20.0	54.0	5112	42	4699	1.09
Mean:	20.3	53.3	5011	——	4731	1.06
SD:	0.46	2.72	105	——	56	0.020

TEMP = temperature (daily mean)
RH = relative humidity (daily mean)
A = analytical concentration (daily mean)
SD = standard deviation
NOM = nominal concentration
<MDL = less than the estimated minimum detection limit of 10 ppm

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

CHAMBER DESCRIPTION AND CHAMBER PROBE POSITIONS

CHAMBER

Construction:	Stainless steel and glass.
Manufacturer:	Wahmann Manufacturing Company (Timonium, MD)
Shape:	Rectangular
Dimensions:	Height: 207 cm
	Width: 98 cm
	Depth: 213 cm

Chamber #39-1 Probe Placement (5000 ppm Target: Prestudy)

Probe Number	Location (x:y:z)* Units (cm)				
1	37	:	144	:	63
2	75	:	145	:	134
3 Analytical Probe	47	:	107	:	181
4	26	:	83	:	135
5	71	:	83	:	64

*Location described by a three-dimensional coordinate system: x = width coordinate; y = depth coordinate; z = height coordinate. The origin of the coordinate system (0:0:0) is the lower left front corner of the internal chamber.

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY
IN FEMALE FISCHER 344 RATS

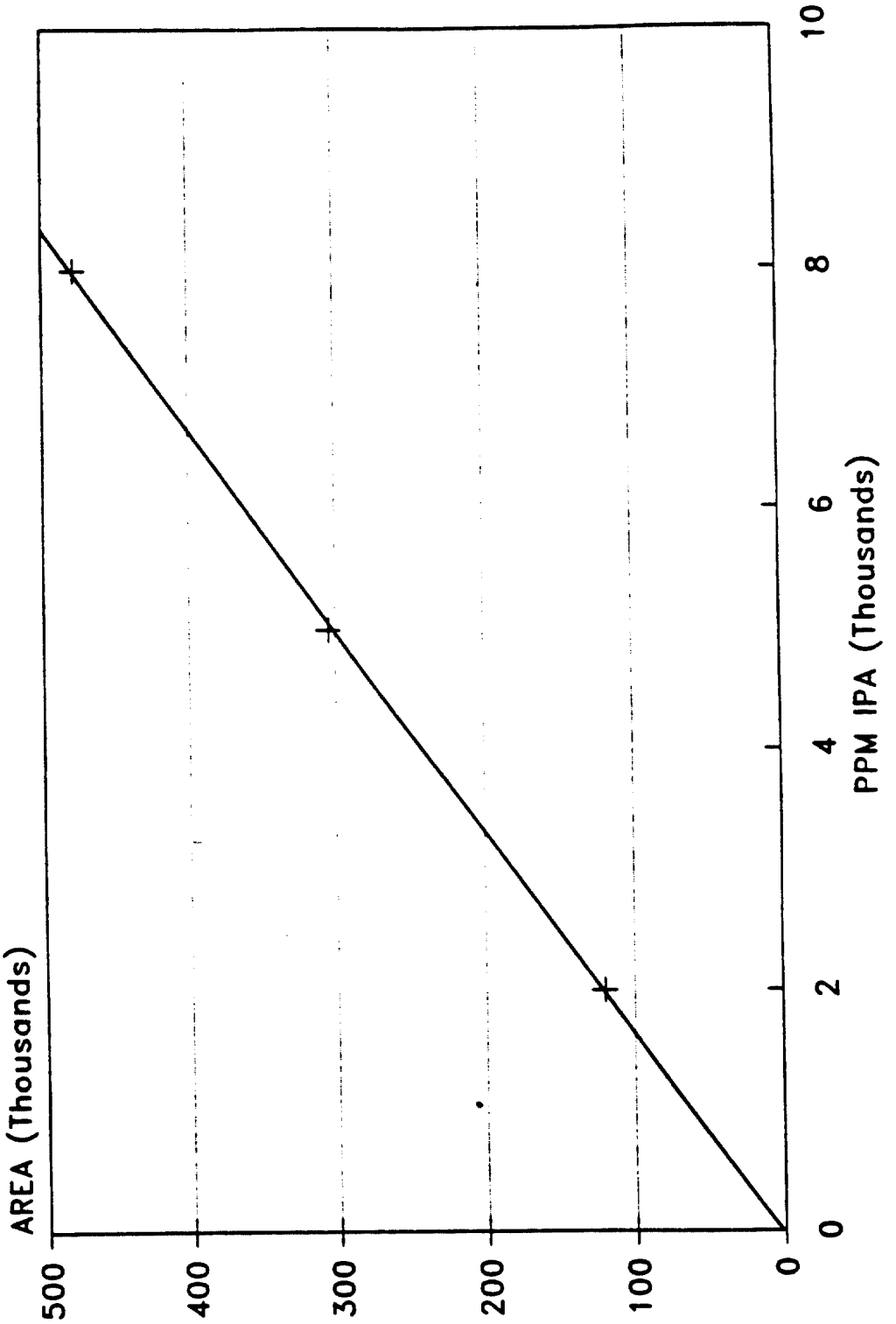
STATISTICAL SUMMARY OF VAPOR CONCENTRATION DISTRIBUTION DATA
ISOPROPANOL CONCENTRATION (PPM) AT CHAMBER PROBE POSITION (1-5)

(Chamber 39-1: Prestudy)

	1	2	3	4	5
	5017	5006	5077	5047	5097
	5088	5064	5082	5084	5058
	5094	5066	5081	5107	5115
Mean:	5066	5045	5080	5079	5090
SD:	42.7	34.0	2.6	29.8	29.0

Grand mean = 5072 SD = 17.3 % CV = 0.3

FIGURE 1. IPA
CALIBRATION CURVE



Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Test Substance Characterization Report

Union Carbide Corporation

STUDY TITLE

GLP Analysis-Final Report

TEST SUBSTANCE

Isopropanol, Anhydrous

DATA REQUIREMENT

U.S. FDA, 21 CFR 58
U.S. EPA TSCA, 40 CFR 792
U.S. EPA FIFRA 40 CFR 160

STUDY DIRECTOR

Alexander E. Gabany, Jr.

STUDY COMPLETED ON

October 26, 1993

PERFORMING LABORATORY

Union Carbide Corporation
PO Box 8361
South Charleston, West Virginia 25303

UCC R/D LABORATORY PROJECT ID

Study # 37-AEG-64

SPONSOR COMPANY

Union Carbide Corporation
Solvents and Coating Materials Division
Danbury, Conn. 06817-0001

STUDY COMPLIANCE STATEMENT

Study Compliance Statement for Union Carbide Corporation (UCC) Study # 37-AEG-64, Isopropanol, Anhydrous study for Bushy Run Research Center.

In accordance with UCC's intent that all tests conducted by our facility follow good laboratory practices, UCC's study director for the above test confirms that the study was conducted in compliance with the U.S. EPA Section 4 Good Laboratory Practice standards; TSCA 40 CFR 792; FIFRA 40 CFR 160 and FDA, 21 CFR 58. All original raw data, records, protocols, final reports, and the sample are being retained at UCC's South Charleston, WV, Technical Center.

Alexander E. Gabany, Jr. 10/26/93
Study Director Date

PROTOCOL DEVIATION STATEMENT

Protocol Deviation Statement for Union Carbide Corporation (UCC) Study # 37-AEG-64, Isopropanol, Anhydrous study for Bushy Run Research Center.

In accordance with UCC's intent that all tests conducted by our facility follow good laboratory practices, UCC's study director for the above test confirms that there were no protocol deviations taken during the study. The study was conducted in compliance with the protocol established and signed on 5/10/93 by Alexander E. Gabany, GLP Study Director.

Alexander E. Gabany 10/26/93

Alexander E. Gabany, Jr. Date
Study Director

SIGNATURE PAGE

Submitted by: Union Carbide Corporation
P.O. Box 8361
South Charleston, West Virginia 25303

Prepared by:

Alexander E. Gabany, Jr. — 10/26/93 date
Study Director

Arnold M. Harrison — 10/27/93 date
NMR Skill Area Specialist

Richard A. McDonie — 10/27/93 date
GC/MS Skill Area Specialist

Deborah S. Miller — 10/27/93 date
HS&EA Business Analytical Specialist

Quality Assurance Review by:

Denise L. Johnson — 11-8-93 date
GLP Quality Assurance Unit
(QAU) Representative

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Isopropanol, Anhydrous

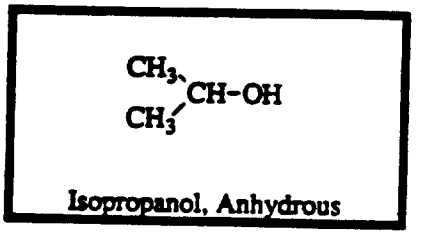
Isopropanol, Anhydrous
Study # 37-AEG-64

ABSTRACT Isopropanol, Anhydrous, was analyzed to provide analytical data as part of the toxicity study at Bushy Run Research Center. The analyses were performed in compliance with Good Laboratory Practice standards (GLP) to meet EPA Section 4 Test Rule requirements and FDA, 21 CFR 58. Gas chromatography-mass spectrometry (GC/MS) and nuclear magnetic resonance spectroscopy (NMR) techniques were independently used to confirm the sample's identity. Purity, measured by capillary GC, is ≈99.98% for the pre-study and ≈99.99% for the post-study sample. The samples were received from Bushy Run Research Center. All raw data, documentation, records, protocols, final reports, and the sample are being retained.

INTRODUCTION Richard C. Wise, this study's sponsor, requested that Bushy Run Research Center (BRRC) test Isopropanol, Anhydrous, for toxicity. Such studies must follow GLP standards established by the EPA that require they be conducted with authentic material whose identity and purity are verified analytically.

A one quart sample of Isopropanol, Anhydrous, (37-AEG-66) was received 4/26/93 from UCC Texas City, TX, *via* UCC R&D, South Charleston, for analytical characterization. This sample is a subsample of a larger quantity of Isopropanol, Anhydrous, (ID # 22-MPS-58, Tank 1543, 4/15/93; BRRC # 56-127) tested at Bushy Run Research Center. A GLP protocol describing the analytical characterization of the sample was prepared (Appendix 1). The protocol called for structural identification by NMR and GC/MS and for the capillary GC measurement of any impurities identified by GC/MS. The post-study sample (37-AEG-66R) was received from Bushy Run Research Center on 8/26/93.

Shown at right is the structure of Isopropanol, Anhydrous; its Chemical Abstracts Service Registry number (CAS #) is 67-63-0.



Isopropanol, Anhydrous

DISCUSSION The data from the analyses are summarized below.

NMR Analyses Proton and carbon NMR data were collected in the UCC NMR Skill Center using a General Electric GN-300NB spectrometer. The acquisition parameters are shown in the figures; for the ^1H NMR spectrum, the pulses used correspond to <3° flip angles; the ^{13}C flip angles were 30°; the $^{13}C\{^1H\}$ (proton decoupled ^{13}C) spectrum used Waltz 16 modulation for ^1H decoupling. The spectra were not acquired under quantitative conditions; the acquisition conditions were established to identify the major component and to look for any substantial impurities. The sample was dissolved in deuterochloroform for analysis; tetramethylsilane (TMS) was added to provide an internal chemical shift reference. The TMS and deuterochloroform were used as received.

Figure 1 shows the ^1H NMR spectrum obtained from the sample 37-AEG-66. The observed chemical shifts, spin-spin coupling patterns, and relative intensities are appropriate for anhydrous isopropanol. The methyl protons are seen as a doublet at 1.18 ppm, and the methine proton as a septet at 3.98 ppm. The hydroxyl proton is a singlet at 4.08 ppm.

Figure 2 shows the $^{13}C\{^1H\}$ spectrum for the same sample. No unusual or unexpected resonances are seen. The expected chemical shifts and relative intensities for the two types of carbons in isopropanol are seen: the two methyl carbons are at 25.2 ppm and the methine carbon is at 63.9 ppm. The 1:1:1 triplet at 77.5 ppm is from the $CDCl_3$ solvent; the TMS is at 0 ppm.

The NMR spectra are consistent with the sample being pure anhydrous isopropanol.

GC/MS Analysis Electron ionization (EI) and chemical ionization (CI) mass spectral data were collected in the UCC MS Skill Center using a Finnigan TSQ-70 mass spectrometer interfaced to a Hewlett-Packard (HP) 5890 gas chromatograph. The sample, 37-AEG-66, was analyzed by injecting 0.1 µL aliquots onto a CP-Sil-5-CB capillary column held at 30°C for 4 minutes, and then temperature programmed to 250°C at 8°/minute. Figure 3 shows the EI total ion current chromatogram for the sample (scanned from m/z 10 to m/z 310 EI mode and 60

to 360 in the CI mode). This chromatogram is annotated with identifications based on the components' EI and CI spectrum.

Capillary GC A HP 5890 gas chromatograph equipped with a flame ionization detector was used to analyze the sample. Aliquots (1 µL) were injected via autoinjector with a 100:1 split ratio onto a DB-1 capillary column started at 60°C and held for 4 minutes, then temperature programmed to 250°C at 12°/minute (see Figure 4). The averages of triplicate analysis are given below (normalized chromatogram area percent).

Component name	37-AEG-66	37-AEG-66R
Isopropanol	≈99.98	≈99.99
all other impurities	≈0.02	≈0.01

CONCLUSION NMR spectral data and mass spectral fragmentation data from the UCC Skill Centers show that this sample is Isopropanol, Anhydrous. These independent methods satisfy the analytical requirements for structural identification, as defined in the sample protocol. Sample purity, measured by capillary GC, is ≈ 99.98% for the pre-study and ≈99.99% for the post-study sample.

ARCHIVES All raw data, records, protocols, samples and final reports are being retained at UCC's South Charleston, WV, Technical Center as follows:

- raw data from GC, NMR, and GC/MS studies are in 770-363, 770-127, and 770-123, respectively;
- protocols, notebook and other records are to be kept in the GLP archives;
- the remainder of each sample is being kept in a locked GLP sample box in 770-363.

ACKNOWLEDGEMENTS We would like to thank Trudy Barker for sample handling, collecting the GC data, and preparing the bulk of the report, Greg Richards for collecting the GC/MS data, and Kathy Canterbury for collecting the NMR data.

NOTEBOOK REFERENCE: 37-AEG-64 and related pages

Confidentiality No claim of confidentiality is made for any information contained in this study as it pertains to use by any government agency to which it is submitted. This document, however, is proprietary to UCC and is confidential and trade secret information in all other countries and for all purposes other than those directly related to the purposes of the reviewing agency. Information contained in these studies should not be reviewed, abstracted or used by persons other than the agency without the expressed written consent of UCC except as required to carry out statutory requirements.

Figure 1 — ^{1}H NMR Spectrum of 37-AEG-66 (Isopropanol, Anhydrous)

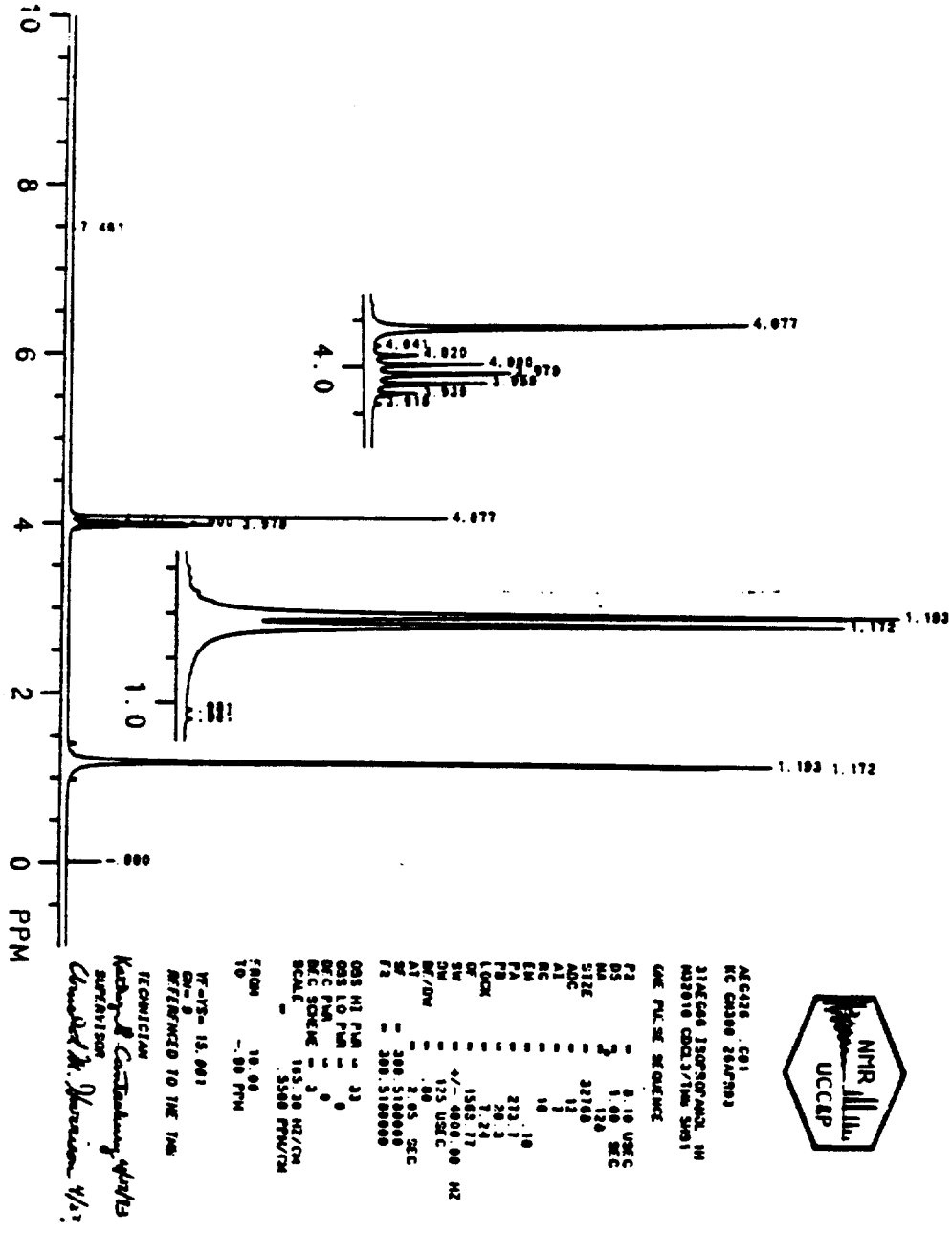


Figure 2 — ^{13}C NMR Spectrum of 37-AEG-66 (Isopropanol, Anhydrous)

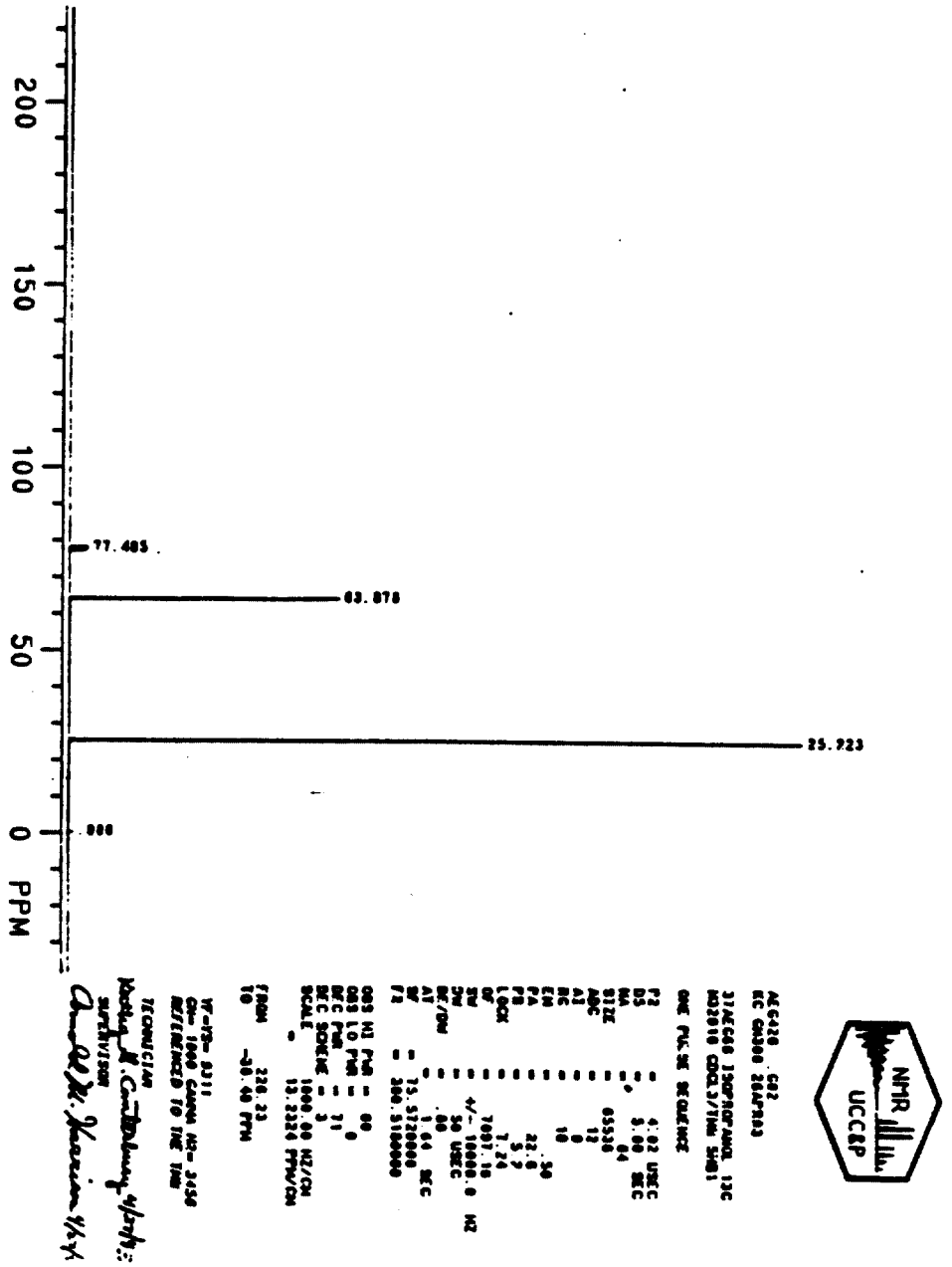


Figure 3 — Capillary GC/MS RIC of 37-AEG-66 (Isopropanol, Anhydrous)

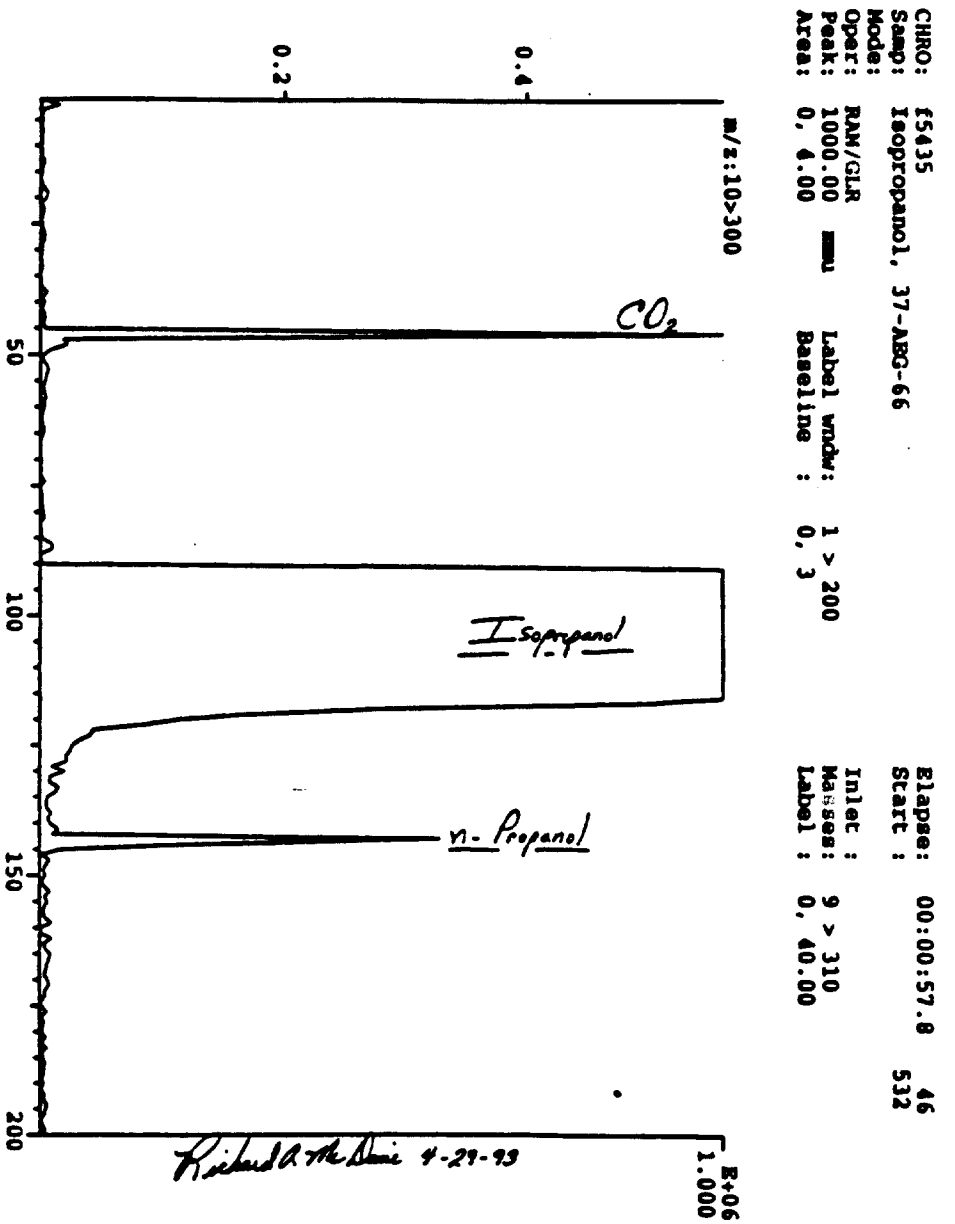


Figure 4 — Capillary Gas Chromatogram of 37-AEG-66 (Isopropanol, Anhydrous)

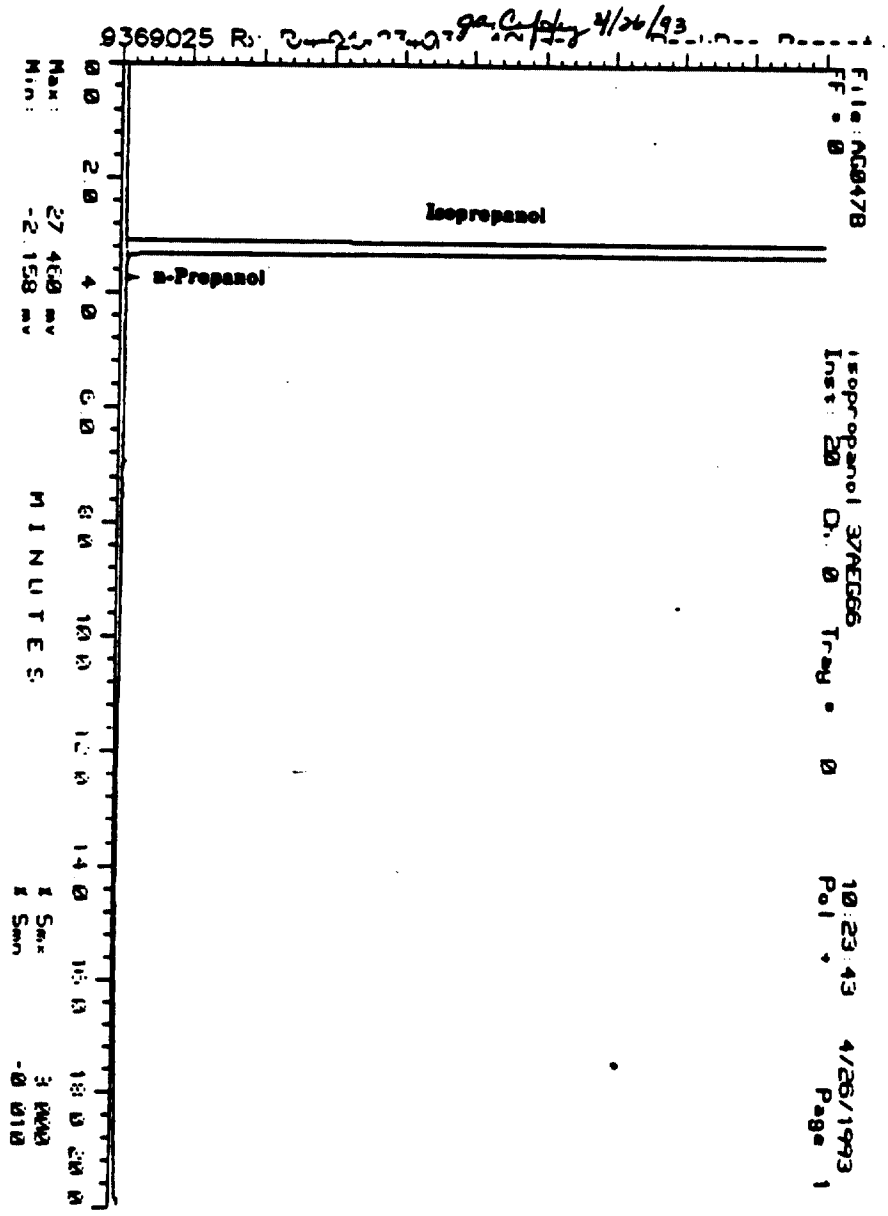
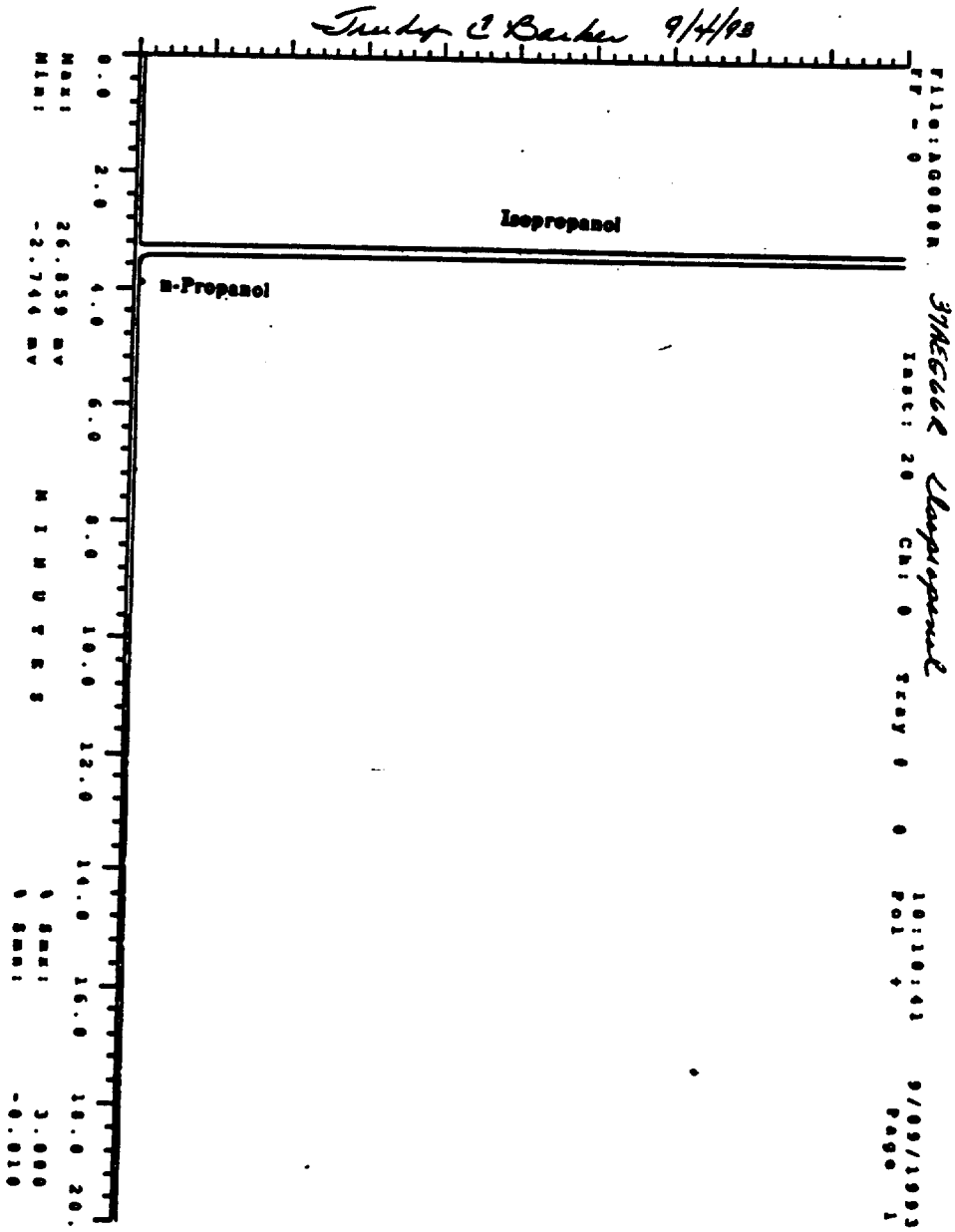


Figure 5— Capillary Gas Chromatogram of 37-AEG-66R (Isopropanol, Anhydrous)



APPENDIX I **Protocol**

PROTOCOL

GOOD LABORATORY PRACTICE (GLP) STUDY

title	Isopropanol, Anhydrous
purpose	Analytical Characterization of Sample(s) for Toxicology Studies at Bushy Run Research Center
study number	37-AEG-64
sponsor	SOLVENTS AND COATING MATERIALS DIVISION (SCMD) Union Carbide Corporation (UCC) 39 Old Ridgebury Road, Danbury, Conn. 06817-0001
testing facility	UCC Technical Center, South Charleston, WV 25303 (Location 511)

Proposed Starting Date: Monday, May 10, 1993
Proposed Completion Date: July 1, 1993
Estimated Date of Final Report: August 1, 1993

Test Substance(s) 37-AEG-66

Name	isopropanol, anhydrous
Source	ID # Tank 1543, 4/15/93; UCC, Texas City, TX
CAS Registry No.	67-63-0
Description	colorless liquid; characteristic odor
Purity	99.9%
Health/Safety	mildly toxic; stable. MSDS available upon request
Storage Conditions	ambient

Study Design

The test substance(s) will be characterized by:

- Verification of identity by proton- and carbon-NMR.
- Verification of identity by GC/MS. An attempt will be made to identify all impurities at the concentration of ≥0.1 wt. %.
- Quantitation of the identified impurities by capillary GC.

Reviewed and Approved by:

Alexander E. Gabany	date 5/24/93	Denise L. Johnson	date 5/24/93	Richard C. Wise	date 6-1-93
GLP Study Director		GLP Quality Assurance Unit (QAU) Representative		Manager of Product Safety, SCMD, Sponsor	

This study will be performed in compliance with the following GLP standards: FDA, 21 CFR, Part 58; TSCA, 40 CFR, Part 792; and FIFRA, 40 CFR, Part 160. All changes of an approved protocol and the reasons therefor shall be documented, signed by the study director, dated, and maintained with the protocol. All raw data, reports and a sample of test substance from this study will be retained at Location 511 for at least 10 years after completion of the study. A comprehensive final report will be submitted to the Sponsor within one month after the completion of the analysis. The final report will be inspected by the QAU and will contain a signed quality assurance statement.

QAU STATEMENT

Quality Assurance Unit Study Inspection Summary

Test Substance: ISOPROPANOL, ANHYDROUS

Study No.: 37-AEG-64

Study Director: A.E. Gabany, B.S.

The Quality Assurance Unit of the Union Carbide Technical Center conducted the inspections listed below and reported the results to the study director and management on the date indicated. It is the practice of this Quality Assurance Unit to report the results to both the study director and management.

Inspection Date	Inspection Type	Date QAU Report Issued To Study Director	Date QAU Report Issued To Management
Feb. 10, 1992	Laboratory Compliance Review*	Feb. 10, 1992	May, 1992
May 24, 1993	Protocol Compliance Review	May 24, 1992	May 24, 1992
Nov. 8, 1993	Final Report Compliance Review	Nov. 8, 1993	Nov. 8, 1993

*The process of doing the GLP characterization studies is audited periodically to assure these studies comply with GLP requirements. The QA unit is exempted from performing in-life study inspections for studies designed to determine physical and chemical characteristics of a test substance as described in 40 CFR 792.135.

Denise L. Johnson 11/8/93

Denise L. Johnson, QAU Representative (Date)
Good Laboratory Practices/Quality Assurance

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Neurotoxicology Report

(34 Pages)

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SUMMARY

A 90-day vapor inhalation study was conducted with isopropanol (CAS No. 67-63-0) to determine if results observed in a previous subchronic vapor inhalation study with isopropanol (BRRC Report 53-589) could be reproduced. The study was also performed to determine if effects, should they be observed, were reversible. Female Fischer 344 rats were exposed to 5000 ppm of isopropanol vapor or air (control) 6 hours per day, 5 days per week for either 9 weeks or 13 weeks. Fifteen females per group were included in both exposure regimens. Motor activity was measured for all animals prior to the start of the exposure regimen and 1 day following 4, 7 and 9 weeks of exposure. Motor activity for the animals designated for 13 weeks of exposure (designated as Test Block 1 animals) was also measured 1 day following 11 and 13 weeks of exposure. To evaluate the potential reversibility of the effects, motor activity for animals designated for 9 weeks of exposure (designated as Test Block 2 animals) was measured 2, 4 and 7 days following their last exposure during Week 9. Similarly, motor activity for animals in test block 1 was measured 2, 4, 7, 14, 21, 28, 35 and 42 days following their last exposure during Week 13.

Exposure of female Fischer 344 rats to 5000 ppm isopropanol vapor resulted in increases in motor activity following 4, 7, 9, 11 and 13 weeks of exposure. Isopropanol-induced increases in motor activity following 9 consecutive weeks of exposure were reversed within 2 days postexposure. Motor activity increases observed following 13 consecutive weeks of exposure were largely reversed within 14 days postexposure. Subtle, yet statistically significant changes in the shape of the activity versus test session time profile were observed at some postexposure test sessions after the animals had apparently recovered from the isopropanol-induced increases in motor activity. These statistically significant interactions between exposure concentration and test session time resulted, in part, from increases in activity for isopropanol-exposed animals during the initial 10 to 30 minutes of the test session. Because of the limited nature of the changes, it is unclear if these latter changes were related to isopropanol exposure. Effects in the shape of the activity versus test session time profile similar to those observed in this study were not observed in the previous subchronic vapor inhalation study with isopropanol (BRRC Report 53-589). Complete recovery from the effects on motor activity were apparent by postexposure Day 42. An unexpected increase in motor activity observed for isopropanol-exposed animals 2 weeks after the animals had apparently recovered could not be clearly attributed to exposure to isopropanol because of the time course for the effect.

The results from this study produced findings similar to those noted previously in female Fischer 344 rats following 9 and 13 weeks of exposure to isopropanol vapor at a target concentration of 5000 ppm (BRRC Report 53-589). In addition, the results from this study demonstrated that isopropanol-induced changes in motor activity were reversible.

MATERIALS AND METHODS

Female Fischer 344 rats, approximately 8 weeks of age at the start of the exposure regimen, were tested using an automated recording apparatus designed to measure activity in a novel environment (San Diego Instruments Inc., San Diego, CA). All test sessions were 90 minutes in duration. For the purposes of statistical evaluation, intrasession intervals were 10 minutes in duration. Data for ambulatory activity, fine motor activity, rearing activity and the sum of these individual types of activity (sum of all counters or total activity) were collected and analyzed.

Animals were divided into 2 test blocks to accommodate the schedule for testing. Animals designated for 13 weeks of exposure were assigned to Test Block 1 and those designated for 9 weeks of exposure were assigned to Test Block 2. Motor activity was measured for all animals prior to the start of the exposure regimen and 1 day following the fourth, seventh and ninth weeks of exposure. Motor activity for Test Block 1 animals was also measured 1 day following the eleventh and thirteenth weeks of exposure. To evaluate the potential reversibility of the effects, motor activity for Test Block 1 animals was measured 2, 4, 7, 14, 21, 28, 35 and 42 days after 13 weeks of exposure. Similarly, motor activity for animals in Test Block 2 was measured 2, 4 and 7 days following 9 weeks of exposure. Motor activity test session on each day of testing began at approximately 8:30 a.m. for Test Block 1 animals and approximately 10:30 a.m. for Test Block 2 animals. The latency from the end of exposure and the beginning of the 1-day postexposure test session was approximately 18 and 20 hours for Test Block 1 and Test Block 2 animals, respectively.

A nested analysis of motor activity data incorporating data from all test periods was performed for each test block. Exposure level was used as the grouping factor and test period and test session time were used as within-subject factors. Exposure-related effects on motor activity were indicated when statistically significant interactions were observed between exposure level and test period or exposure level, test period and test session time. In that event, additional repeated-measures analyses were conducted at discrete test periods to determine which test periods were affected. The additional repeated-measures analyses used exposure level as a grouping factor and test session time as a within-subject factor. In these additional analyses, a statistically significant finding for exposure level indicated overall exposure-related changes, and a statistically significant interaction between exposure level and test session time indicated exposure-related changes in the shape of the time versus activity profile during the test session. Statistical analysis for motor activity was performed using BMDP Statistical Software (Dixon, 1990) using the epsilon adjustment procedure (Greenhouse-Geisser Correction). The critical level of significance of $p < 0.05$ (two-tailed) was used for all statistical comparisons. Probability values generated in the repeated-measures analyses were not corrected to account for multiple comparisons. Probability values are reported in the summary tables and figures for $p < 0.05$ and $p < 0.01$. Summaries of the statistical analyses performed on the motor activity data and all probability values generated in the repeated-measures analysis are presented in Appendix 6.

Animals were assigned to motor activity testing so that the exposure groups were distributed across enclosures at each test session to limit bias resulting from possible differences in environmental conditions or recorder sensitivities. The exposure group distribution scheme for the motor activity animal enclosures and the procedures used to evaluate the function of the individual animal enclosures are included in Appendix 6. Data generated at Bushy Run Research Center demonstrating dose-related increases and decreases in motor activity following treatment with known neuroactive compounds, temporal motor activity profiles used for determining test session lengths and statistical power calculations used for determining group size are presented in BRRC Developmental Project Report 51-904.

RESULTS AND DISCUSSION

Cumulative counts of total motor activity for each test session are summarized in Table 1 and Figures 1 and 2. Total motor activity for 10-minute interval counts is summarized in Tables 2 to 18 and Figures 3 and 4. Individual animal data for motor activity are included in Appendix 6. The following discussion of exposure-related effects on motor activity focuses on total motor activity rather than the individual type of activity (ambulation, fine motor activity and rearing activity) since evaluation of the data indicates that isopropanol generally did not affect preferentially any of these individual activities. Discussion of cumulative test session activity refers to the sum of total activity across the 90-minute test session. The time versus activity profile during the test session refers to the profile of total activity at 10-minute intervals during the test session.

Exposure to 5000 ppm isopropanol resulted in increased motor activity 1 day following 4, 7, 9, 11 and 13 weeks of exposure (Table 1 and Figures 1 and 2). The differences in mean motor activity between the isopropanol-exposed and control groups tended to increase during the study with a maximum change from control occurring at 9 weeks of exposure. Mean cumulative test session activity for animals in Test Block 1 was increased 35% at Week 4, 53% at Week 7, 144% at Week 9, 103% at Week 11 and 116% at Week 13, compared to control. Mean cumulative test session activity for animals in Test Block 2 was increased 41% at Week 4, 79% at Week 7, and 76% at Week 9, compared to control.

Mean cumulative test session activity during the postexposure evaluations for Test Block 2 animals was not different from control by the 2-day postexposure test session (Table 1 and Figure 2). Postexposure recovery of mean cumulative test session activity for animals in Test Block 1 (13 weeks of exposure) was generally complete by the 14-day postexposure test session (Table 1 and Figure 1). Mean activity was increased (compared to control) 116% 1 day after exposure, 79% 2 days after exposure, 70% 4 days after exposure, and 38% 7 days after exposure and was not different from control 14 days after exposure. With one exception, differences in mean cumulative test session motor activity after this initial 7-day postexposure period were not statistically significant and were considered to be within the range of normal biological variability. The exception was a 50% increase in activity observed at the 28-day postexposure test period. This latter finding could not be clearly

attributed to exposure with isopropanol since recovery from effects on mean cumulative test session activity was apparent for 2 successive weeks prior to this test period.

Exposure-related changes in mean cumulative motor activity frequently resulted in a statistically significant interaction between exposure concentration and test session time indicative of changes in the shape of the activity versus test session time profile during the test session. Statistically significant changes were observed for Test Block 1 at the 4-, 9-, and 11-week test periods as well as 4 days following the last week of exposure and for Test Block 2 during the 7-week test period. Mean activity at these test periods for isopropanol-exposed animals tended to be increased at most of the 10-minute intrasession intervals.

Subtle, yet statistically significant changes in the shape of the activity versus test session time profile were also observed at some postexposure test sessions after the animals had apparently recovered from the isopropanol-induced increases in motor activity. These statistically significant interactions between exposure concentration and test session time resulted, in part, from increases in activity for isopropanol-exposed animals during the initial 10 to 30 minutes of the test session. Because of the limited nature of the changes, it is unclear if these latter changes were related to isopropanol exposure. There were no statistically significant changes in the shape of the activity versus time profiles observed after postexposure Day 35. Effects in the shape of the activity versus test session time profile similar to those observed in this study were not observed in the previous subchronic vapor inhalation study with isopropanol (BRRC Report 53-589). In the previous study, increases in activity for isopropanol-exposed animals were observed primarily during the latter phases of the test sessions. While a direct comparison to the previous study is limited by differences in the postexposure testing schedules, the dissimilarity in the results between the studies suggests that the limited changes in the shape of the test session activity versus time curves noted in the present study were unrelated to isopropanol exposure.

One plausible explanation for the increases in motor activity observed in this study is that they reflect a "rebound" from the sedative effect of isopropanol. Findings indicative of sedation of the central nervous system were demonstrated previously in the rat following a single exposure to 5000 ppm isopropanol (BRRC Report 53-554). Repeated exposure to high concentrations of isopropanol in the present study may have resulted in pharmacological changes in the nervous system which stimulated motor activity once exposure to isopropanol was stopped. According to this theory, the rebound effect observed here may be likened to the tolerance/withdrawal phenomenon typically seen following repeated ethanol exposure (Gonzalez and Czachura, 1989; Grant et al., 1990; and Kalant, 1977). However, an analogy to ethanol is made with the caveat that the effects noted for animals in this study are markedly less pronounced compared to those typically seen following repeated ethanol exposure.

CONCLUSION

Exposure of female Fischer 344 rats to 5000 ppm isopropanol vapor resulted in increases in motor activity following 4, 7, 9, 11 and 13 weeks of exposure. The results from this study produced findings similar to those noted previously in female Fischer 344 rats following 9 and 13 weeks of exposure (BRRC Report 53-589). Isopropanol-induced increases in motor activity were largely reversed within 14 days postexposure. Complete recovery from the effects on motor activity were apparent within 42 days postexposure. Subtle differences observed in the shape of the activity versus test session time profiles during the postexposure test periods and an unexpected increase in motor activity observed for isopropanol-exposed animals on postexposure Day 28 could not be clearly attributed to isopropanol exposure.

Neurotoxicology Consultant: Michael W. Gill, Ph.D. 5/3/94 Date

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TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
CUMULATIVE TEST SESSION COUNTS - SUM OF ALL COUNTERS

	BLOCK 1		BLOCK 2	
GROUP: (PPM)	0	5000	0	5000
PREEXPOSURE				
MEAN	933.4	965.0	679.0	758.3
S.D.	480.60	364.57	175.00	201.12
N	15	15	15	15
WEEK 4 - 1 DAY POSTEXPOSURE				
MEAN	956.1	1294.5*	1034.5	1461.5*
S.D.	229.21	420.25	354.32	589.30
N	15	15	15	15
WEEK 7 - 1 DAY POSTEXPOSURE				
MEAN	1121.0	1710.7*	1028.2	1838.9**
S.D.	445.09	733.58	237.00	805.45
N	15	15	15	15
WEEK 9 - 1 DAY POSTEXPOSURE				
MEAN	783.3	1913.6**	1049.6	1852.7**
S.D.	221.72	693.46	281.44	613.00
N	15	15	15	15
WEEK 9 - 2 DAYS POSTEXPOSURE				
MEAN			968.4	1180.6
S.D.			342.72	661.17
N			15	15
WEEK 10 - 4 DAYS POSTEXPOSURE				
MEAN			733.8	903.5
S.D.			261.30	533.40
N			15	15
WEEK 10 - 7 DAYS POSTEXPOSURE				
MEAN			678.4	734.5
S.D.			264.04	309.00
N			15	15
WEEK 11 - 1 DAY POSTEXPOSURE				
MEAN	809.5	1646.2**		
S.D.	371.43	1024.69		
N	15	15		
WEEK 13 - 1 DAY POSTEXPOSURE				
MEAN	934.9	2020.8**		
S.D.	328.52	830.73		
N	15	15		

* Significantly different from control group ($p < 0.05$)
** Significantly different from control group ($p < 0.01$)
Statistical analyses were performed only between the 2 groups within each test block.

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
CUMULATIVE TEST SESSION COUNTS - SUM OF ALL COUNTERS

GROUP: (PPM)	BLOCK 1 0	5000
WEEK 13 - 2 DAYS POSTEXPOSURE		
MEAN	685.9	1226.7**
S.D.	261.93	514.79
N	15	15
WEEK 14 - 4 DAYS POSTEXPOSURE		
MEAN	826.9	1401.5**
S.D.	267.34	451.69
N	15	15
WEEK 14 - 7 DAYS POSTEXPOSURE		
MEAN	818.5	1128.9*
S.D.	215.52	478.50
N	15	15
WEEK 15 - 14 DAYS POSTEXPOSURE		
MEAN	1320.9	1393.6
S.D.	558.63	442.13
N	15	15
WEEK 16 - 21 DAYS POSTEXPOSURE		
MEAN	758.1	963.3
S.D.	425.82	380.47
N	15	15
WEEK 17 - 28 DAYS POSTEXPOSURE		
MEAN	955.2	1431.3*
S.D.	355.22	718.77
N	15	15
WEEK 18 - 35 DAYS POSTEXPOSURE		
MEAN	1266.9	1496.6
S.D.	455.41	635.50
N	15	15
WEEK 19 - 42 DAYS POSTEXPOSURE		
MEAN	1438.8	1510.9
S.D.	626.03	648.44
N	15	15

* Significantly different from control group ($p < 0.05$)
** Significantly different from control group ($p < 0.01$)

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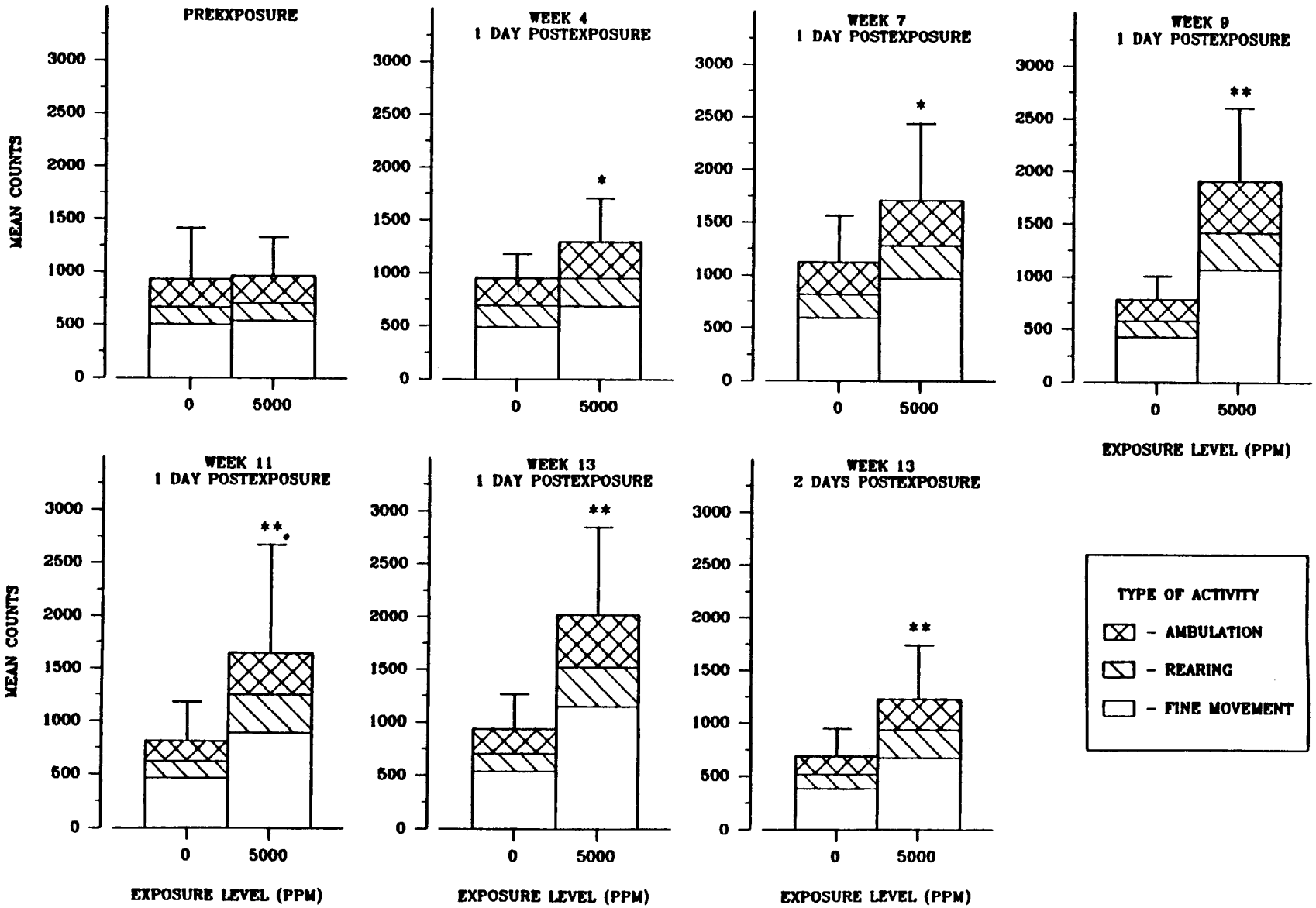
FIGURE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

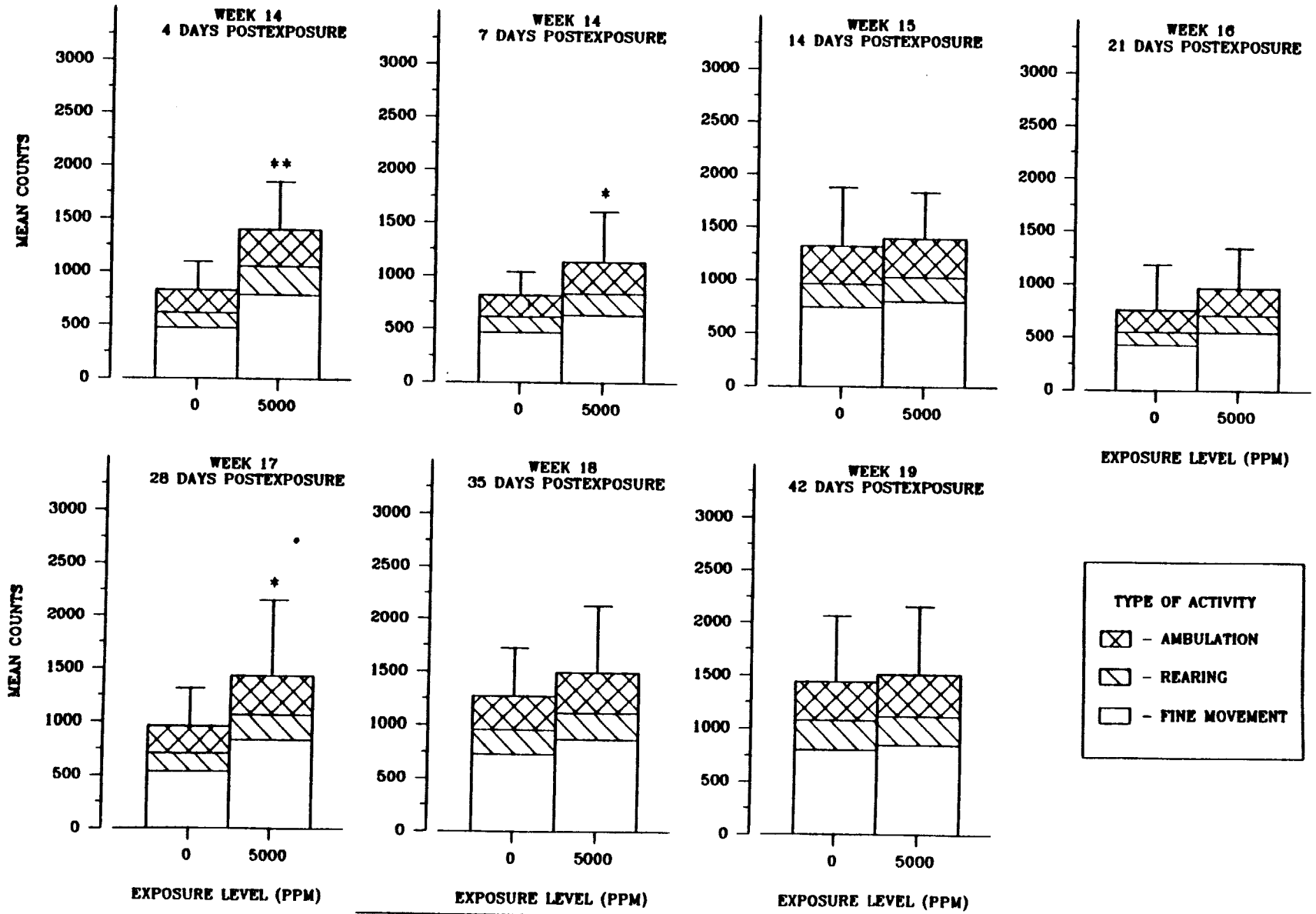
BLOCK 1 - CUMULATIVE TEST SESSION ACTIVITY VERSUS EXPOSURE LEVEL



* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)
The error bars represent the standard deviations for total activity.

FIGURE 1 (CONTINUED)
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

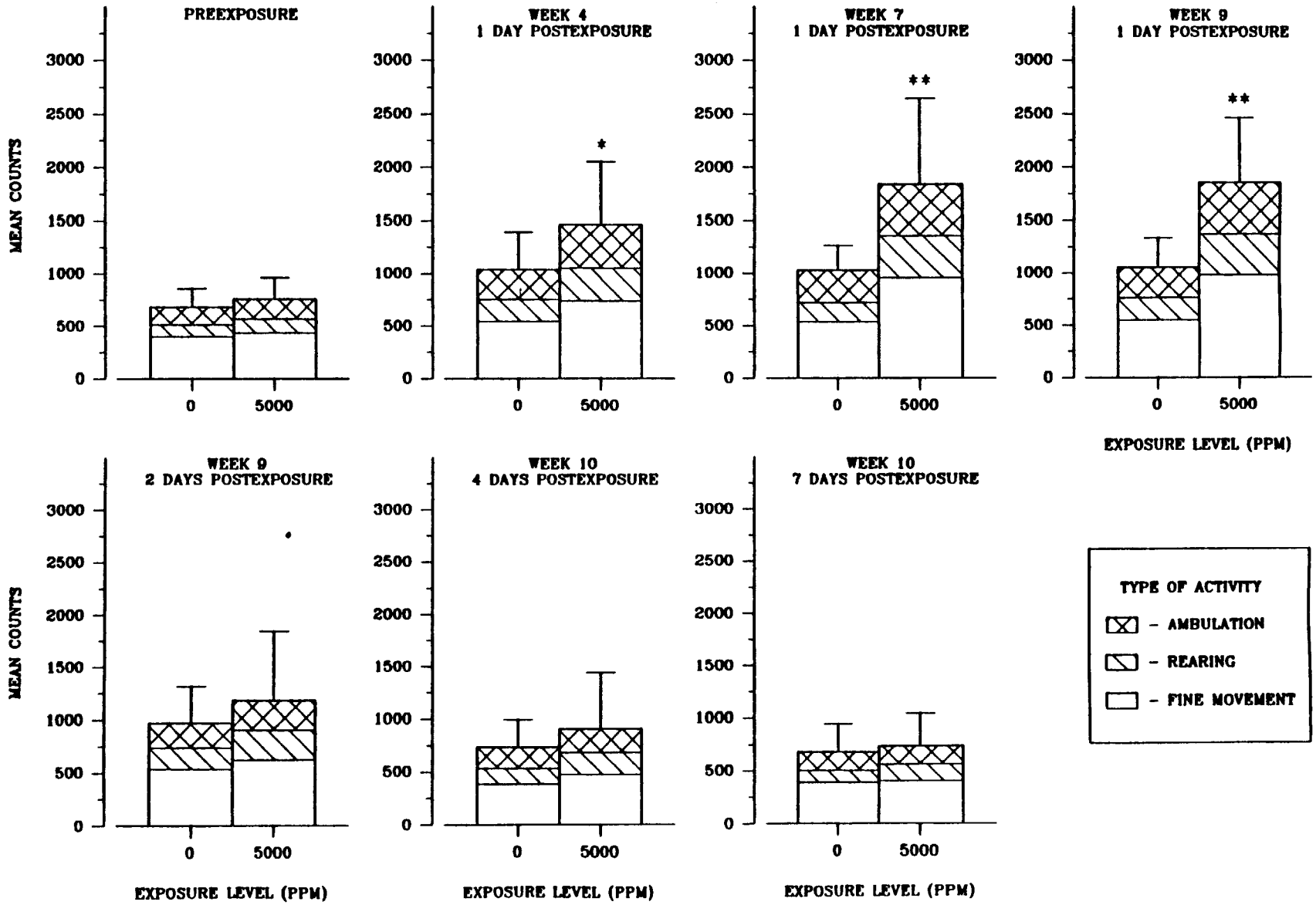
BLOCK 1 - CUMULATIVE TEST SESSION ACTIVITY VERSUS EXPOSURE LEVEL



* Significantly different from control group ($p < 0.05$)
**Significantly different from control group ($p < 0.01$)
The error bars represent the standard deviations for total activity.

FIGURE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

BLOCK 2 - CUMULATIVE TEST SESSION ACTIVITY VERSUS EXPOSURE LEVEL



* Significantly different from control group ($p < 0.05$)
** Significantly different from control group ($p < 0.01$)
The error bars represent the standard deviations for total activity.

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
PREEXPOSURE

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
0 TO 10 MINUTES				
MEAN	300.5	326.9	303.4	315.0
S.D.	64.62	79.63	53.61	76.30
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	276.6	282.8	194.1	273.1
S.D.	120.13	112.55	98.08	100.65
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	182.9	162.1	102.5	131.3
S.D.	96.68	102.74	88.84	96.59
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	76.5	106.9	33.1	15.0
S.D.	102.43	91.22	55.20	22.35
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	41.5	47.5	13.7	3.1
S.D.	105.53	74.01	28.74	6.76
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	29.9	20.9	10.5	8.5
S.D.	77.02	18.43	24.01	9.63
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	14.7	2.9	11.9	4.2
S.D.	43.15	7.53	39.49	8.73
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	6.9	8.7	8.3	3.9
S.D.	15.49	19.13	15.26	5.04
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	4.0	6.2	1.3	4.3
S.D.	5.81	9.57	2.64	6.20
N	15	15	15	15

No statistically significant exposure level effects on the time versus activity profiles of the data were indicated.
Statistical analyses were performed only between the 2 groups within each test block.

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TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 4 - 1 DAY POSTEXPOSURE

	BLOCK 1		BLOCK 2	
GROUP: (PPM)	0	5000	0	5000
0 TO 10 MINUTES				
MEAN	378.8	412.3	386.9	465.0
S.D.	60.49	95.99	70.22	79.00
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	246.5	336.2	248.2	369.4
S.D.	58.14	92.98	91.65	93.93
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	165.1	231.9	201.7	259.3
S.D.	90.39	110.37	93.16	111.24
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	90.3	172.5	105.2	164.2
S.D.	101.36	120.37	89.23	120.10
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	38.2	85.9	59.7	67.1
S.D.	55.28	95.27	95.34	107.06
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	8.1	28.2	15.9	51.9
S.D.	22.89	51.64	34.37	99.07
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	2.9	8.9	4.9	29.4
S.D.	9.80	22.56	14.87	67.02
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	10.5	8.3	9.1	22.5
S.D.	25.71	16.28	30.83	53.57
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	15.7	10.3	2.9	32.5
S.D.	20.41	27.10	4.67	85.64
N	15	15	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data for block 1 was indicated. *
Statistical analyses were performed only between the 2 groups within each test block.

RPT_NT:IPASRF2.SMA

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 7 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
0 TO 10 MINUTES				
MEAN	412.3	483.1	421.1	578.0
S.D.	73.89	158.14	73.26	122.75
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	245.9	343.0	318.4	412.5
S.D.	77.60	115.73	66.08	105.48
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	189.9	276.1	182.8	284.0
S.D.	83.75	115.96	94.29	129.02
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	109.5	208.3	72.8	246.4
S.D.	82.89	124.19	74.72	132.83
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	70.1	165.3	16.3	95.0
S.D.	105.66	120.24	26.64	97.53
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	54.4	121.4	1.2	80.7
S.D.	96.77	124.06	2.14	136.92
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	36.1	56.4	4.0	49.3
S.D.	74.68	88.01	13.09	129.84
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	2.6	26.1	9.3	41.0
S.D.	6.81	66.58	35.06	90.14
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	.3	31.1	2.3	52.1
S.D.	.80	83.63	8.76	111.97
N	15	15	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data for block 2 was indicated. *
Statistical analyses were performed only between the 2 groups within each test block.

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TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 9 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	BLOCK 1 5000	BLOCK 2 0	BLOCK 2 5000
0 TO 10 MINUTES				
MEAN	376.1	485.8	449.0	605.1
S.D.	70.53	125.03	114.40	129.98
N	15	15	15	15
10 TO 20 MINUTES				
MEAN	209.8	360.1	247.5	382.9
S.D.	71.19	105.52	66.76	88.47
N	15	15	15	15
20 TO 30 MINUTES				
MEAN	117.7	265.1	163.5	264.0
S.D.	92.21	69.90	83.69	121.16
N	15	15	15	15
30 TO 40 MINUTES				
MEAN	49.8	224.1	77.8	187.3
S.D.	59.10	114.49	76.35	124.42
N	15	15	15	15
40 TO 50 MINUTES				
MEAN	9.5	166.6	36.4	100.5
S.D.	18.84	99.90	45.98	117.55
N	15	15	15	15
50 TO 60 MINUTES				
MEAN	10.1	152.7	17.5	114.5
S.D.	27.52	120.12	58.52	112.86
N	15	15	15	15
60 TO 70 MINUTES				
MEAN	4.1	106.7	24.3	92.4
S.D.	14.67	104.73	78.07	140.10
N	15	15	15	15
70 TO 80 MINUTES				
MEAN	1.1	86.7	24.7	73.7
S.D.	3.20	110.73	49.73	113.07
N	15	15	15	15
80 TO 90 MINUTES				
MEAN	5.2	65.8	8.9	32.2
S.D.	15.40	83.93	15.66	55.42
N	15	15	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data for block 1 was indicated. *
Statistical analyses were performed only between the 2 groups within each test block.

RPT_NT:IPASRF4.SMA

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 9 - 2 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 2 0	5000
0 TO 10 MINUTES		
MEAN	403.8	440.8
S.D.	60.90	145.33
N	15	15
10 TO 20 MINUTES		
MEAN	215.6	233.7
S.D.	97.05	113.28
N	15	15
20 TO 30 MINUTES		
MEAN	153.7	182.7
S.D.	117.05	154.34
N	15	15
30 TO 40 MINUTES		
MEAN	93.7	97.0
S.D.	92.20	110.61
N	15	15
40 TO 50 MINUTES		
MEAN	48.7	79.1
S.D.	80.31	111.04
N	15	15
50 TO 60 MINUTES		
MEAN	35.3	59.0
S.D.	53.69	122.88
N	15	15
60 TO 70 MINUTES		
MEAN	9.0	28.7
S.D.	15.53	55.56
N	15	15
70 TO 80 MINUTES		
MEAN	2.2	16.5
S.D.	7.70	26.92
N	15	15
80 TO 90 MINUTES		
MEAN	6.4	43.3
S.D.	12.53	60.95
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF5.SMA

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 10 - 4 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 2 0	5000
0 TO 10 MINUTES		
MEAN	420.1	498.3
S.D.	103.37	138.44
N	15	15
10 TO 20 MINUTES		
MEAN	182.3	220.7
S.D.	57.48	125.00
N	15	15
20 TO 30 MINUTES		
MEAN	53.5	92.9
S.D.	58.18	135.84
N	15	15
30 TO 40 MINUTES		
MEAN	64.3	31.7
S.D.	141.94	65.51
N	15	15
40 TO 50 MINUTES		
MEAN	10.5	25.3
S.D.	25.44	71.78
N	15	15
50 TO 60 MINUTES		
MEAN	.9	21.0
S.D.	2.84	57.53
N	15	15
60 TO 70 MINUTES		
MEAN	.0	2.7
S.D.	.00	5.05
N	15	15
70 TO 80 MINUTES		
MEAN	1.9	2.7
S.D.	6.96	7.11
N	15	15
80 TO 90 MINUTES		
MEAN	.3	8.1
S.D.	.80	26.18
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF6.SMA

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 10 - 7 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 2 0	5000
0 TO 10 MINUTES		
MEAN	354.7	449.8
S.D.	103.36	119.48
N	15	15
10 TO 20 MINUTES		
MEAN	185.8	206.9
S.D.	90.78	125.18
N	15	15
20 TO 30 MINUTES		
MEAN	97.4	64.0
S.D.	88.09	86.19
N	15	15
30 TO 40 MINUTES		
MEAN	26.5	8.5
S.D.	58.72	26.38
N	15	15
40 TO 50 MINUTES		
MEAN	9.7	1.3
S.D.	36.89	4.91
N	15	15
50 TO 60 MINUTES		
MEAN	1.0	2.1
S.D.	2.45	5.19
N	15	15
60 TO 70 MINUTES		
MEAN	2.1	.5
S.D.	7.73	1.06
N	15	15
70 TO 80 MINUTES		
MEAN	.1	.7
S.D.	.26	1.84
N	15	15
80 TO 90 MINUTES		
MEAN	1.2	.9
S.D.	4.38	3.09
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF7.SMA

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 11 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	326.5	462.0
S.D.	78.29	138.62
N	15	15
10 TO 20 MINUTES		
MEAN	160.3	292.1
S.D.	71.25	137.53
N	15	15
20 TO 30 MINUTES		
MEAN	111.1	264.7
S.D.	80.77	136.41
N	15	15
30 TO 40 MINUTES		
MEAN	81.3	183.5
S.D.	72.96	160.48
N	15	15
40 TO 50 MINUTES		
MEAN	55.1	160.6
S.D.	76.94	148.02
N	15	15
50 TO 60 MINUTES		
MEAN	37.3	122.1
S.D.	78.45	155.64
N	15	15
60 TO 70 MINUTES		
MEAN	19.2	81.7
S.D.	43.89	142.56
N	15	15
70 TO 80 MINUTES		
MEAN	11.3	39.3
S.D.	26.89	82.74
N	15	15
80 TO 90 MINUTES		
MEAN	7.3	40.3
S.D.	13.24	89.28
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF8.SMA

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 13 - 1 DAY POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	363.4	479.5
S.D.	75.05	149.75
N	15	15
10 TO 20 MINUTES		
MEAN	175.5	301.1
S.D.	77.45	108.72
N	15	15
20 TO 30 MINUTES		
MEAN	148.3	275.1
S.D.	80.03	93.65
N	15	15
30 TO 40 MINUTES		
MEAN	79.2	208.4
S.D.	70.42	94.05
N	15	15
40 TO 50 MINUTES		
MEAN	53.5	190.1
S.D.	69.03	156.13
N	15	15
50 TO 60 MINUTES		
MEAN	28.4	166.1
S.D.	50.11	121.93
N	15	15
60 TO 70 MINUTES		
MEAN	24.4	133.8
S.D.	43.75	107.1[illegible]
N	15	1[illegible]
70 TO 80 MINUTES		
MEAN	50.3	151.2
S.D.	82.11	114.04
N	15	15
80 TO 90 MINUTES		
MEAN	12.0	115.5
S.D.	22.94	103.91
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPA[illegible]9.SMA

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 13 - 2 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	359.3	436.8
S.D.	114.95	122.55
N	15	15
10 TO 20 MINUTES		
MEAN	177.5	261.4
S.D.	90.00	108.72
N	15	15
20 TO 30 MINUTES		
MEAN	87.7	156.9
S.D.	75.02	90.22
N	15	15
30 TO 40 MINUTES		
MEAN	24.6	115.0
S.D.	35.58	129.18
N	15	15
40 TO 50 MINUTES		
MEAN	7.6	60.9
S.D.	24.24	65.49
N	15	15
50 TO 60 MINUTES		
MEAN	10.9	28.5
S.D.	35.35	47.97
N	15	15
60 TO 70 MINUTES		
MEAN	3.6	39.7
S.D.	8.87	78.70
N	15	15
70 TO 80 MINUTES		
MEAN	12.5	87.3
S.D.	24.39	96.01
N	15	15
80 TO 90 MINUTES		
MEAN	2.2	40.2
S.D.	5.80	58.75
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF10.SMA

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 14 - 4 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	386.4	530.3
S.D.	87.43	115.64
N	15	15
10 TO 20 MINUTES		
MEAN	219.9	330.7
S.D.	63.86	87.96
N	15	15
20 TO 30 MINUTES		
MEAN	122.0	201.3
S.D.	61.76	100.19
N	15	15
30 TO 40 MINUTES		
MEAN	50.9	144.2
S.D.	71.99	111.44
N	15	15
40 TO 50 MINUTES		
MEAN	18.1	89.9
S.D.	32.02	114.99
N	15	15
50 TO 60 MINUTES		
MEAN	11.3	42.3
S.D.	33.51	78.77
N	15	15
60 TO 70 MINUTES		
MEAN	10.9	11.7
S.D.	37.97	15.55
N	15	15
70 TO 80 MINUTES		
MEAN	.1	23.3
S.D.	.52	55.32
N	15	15
80 TO 90 MINUTES		
MEAN	7.2	27.9
S.D.	16.15	43.63
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF11.SMA

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 14 - 7 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	362.9	479.5
S.D.	70.70	113.03
N	15	15
10 TO 20 MINUTES		
MEAN	218.1	272.5
S.D.	53.59	135.69
N	15	15
20 TO 30 MINUTES		
MEAN	122.4	186.2
S.D.	79.33	159.82
N	15	15
30 TO 40 MINUTES		
MEAN	67.9	71.2
S.D.	68.82	76.88
N	15	15
40 TO 50 MINUTES		
MEAN	24.2	43.6
S.D.	37.34	82.29
N	15	15
50 TO 60 MINUTES		
MEAN	8.0	51.8
S.D.	21.77	81.13
N	15	15
60 TO 70 MINUTES		
MEAN	8.4	15.9
S.D.	29.60	30.90
N	15	15
70 TO 80 MINUTES		
MEAN	6.0	7.3
S.D.	22.15	15.89
N	15	15
80 TO 90 MINUTES		
MEAN	.6	1.1
S.D.	1.24	3.20
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated. However, a statistically significant exposure level effect on the time versus activity profiles of the ambulation data was indicated.

RPT_NT:IPASRF12.SMA

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 15 - 14 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	424.8	539.0
S.D.	86.34	119.98
N	15	15
10 TO 20 MINUTES		
MEAN	255.5	282.6
S.D.	75.84	71.86
N	15	15
20 TO 30 MINUTES		
MEAN	197.0	216.3
S.D.	83.26	86.62
N	15	15
30 TO 40 MINUTES		
MEAN	159.1	175.0
S.D.	128.19	114.56
N	15	15
40 TO 50 MINUTES		
MEAN	105.7	99.7
S.D.	119.69	111.06
N	15	15
50 TO 60 MINUTES		
MEAN	75.5	30.8
S.D.	107.31	48.28
N	15	15
60 TO 70 MINUTES		
MEAN	54.5	5.6
S.D.	73.62	10.93
N	15	15
70 TO 80 MINUTES		
MEAN	23.1	1.4
S.D.	48.60	4.17
N	15	15
80 TO 90 MINUTES		
MEAN	25.8	43.2
S.D.	42.26	47.59
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF13.SMA

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 16 - 21 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	387.6	485.6
S.D.	86.48	146.52
N	15	15
10 TO 20 MINUTES		
MEAN	183.6	276.7
S.D.	115.02	143.36
N	15	15
20 TO 30 MINUTES		
MEAN	95.5	132.2
S.D.	103.97	106.56
N	15	15
30 TO 40 MINUTES		
MEAN	53.1	46.3
S.D.	89.61	52.71
N	15	15
40 TO 50 MINUTES		
MEAN	22.2	14.5
S.D.	57.43	27.38
N	15	15
50 TO 60 MINUTES		
MEAN	9.4	1.0
S.D.	32.46	2.45
N	15	15
60 TO 70 MINUTES		
MEAN	2.0	2.7
S.D.	3.46	6.69
N	15	15
70 TO 80 MINUTES		
MEAN	4.3	3.4
S.D.	15.43	12.63
N	15	15
80 TO 90 MINUTES		
MEAN	.5	1.0
S.D.	1.55	2.83
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF14.SMA

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 17 - 28 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	431.9	506.7
S.D.	83.46	119.13
N	15	15
10 TO 20 MINUTES		
MEAN	179.9	284.8
S.D.	55.27	81.09
N	15	15
20 TO 30 MINUTES		
MEAN	154.7	233.5
S.D.	93.72	118.36
N	15	15
30 TO 40 MINUTES		
MEAN	77.3	109.1
S.D.	78.84	106.52
N	15	15
40 TO 50 MINUTES		
MEAN	57.3	77.0
S.D.	90.75	98.05
N	15	15
50 TO 60 MINUTES		
MEAN	14.6	68.6
S.D.	25.96	108.82
N	15	15
60 TO 70 MINUTES		
MEAN	31.2	110.3
S.D.	72.07	181.68
N	15	15
70 TO 80 MINUTES		
MEAN	5.7	20.6
S.D.	12.22	44.26
N	15	15
80 TO 90 MINUTES		
MEAN	2.7	20.7
S.D.	10.33	38.50
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF15.SMA

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 18 - 35 DAYS POSTEXPOSURE

GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	394.4	561.0
S.D.	87.41	148.03
N	15	15
10 TO 20 MINUTES		
MEAN	253.1	309.1
S.D.	60.99	93.99
N	15	15
20 TO 30 MINUTES		
MEAN	182.7	210.3
S.D.	76.67	86.72
N	15	15
30 TO 40 MINUTES		
MEAN	137.3	134.5
S.D.	98.47	108.57
N	15	15
40 TO 50 MINUTES		
MEAN	62.5	57.7
S.D.	71.32	55.18
N	15	15
50 TO 60 MINUTES		
MEAN	73.7	78.7
S.D.	67.25	97.14
N	15	15
60 TO 70 MINUTES		
MEAN	64.3	60.9
S.D.	66.60	74.54
N	15	15
70 TO 80 MINUTES		
MEAN	60.4	53.4
S.D.	98.38	104.41
N	15	15
80 TO 90 MINUTES		
MEAN	38.6	31.1
S.D.	59.67	44.09
N	15	15

A statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF16.SMA

TABLE 18
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

SUMMARY OF MOTOR ACTIVITY DATA
10 MINUTE INTERVAL COUNTS - SUM OF ALL COUNTERS
WEEK 19 - 42 DAYS POSTEXPOSURE

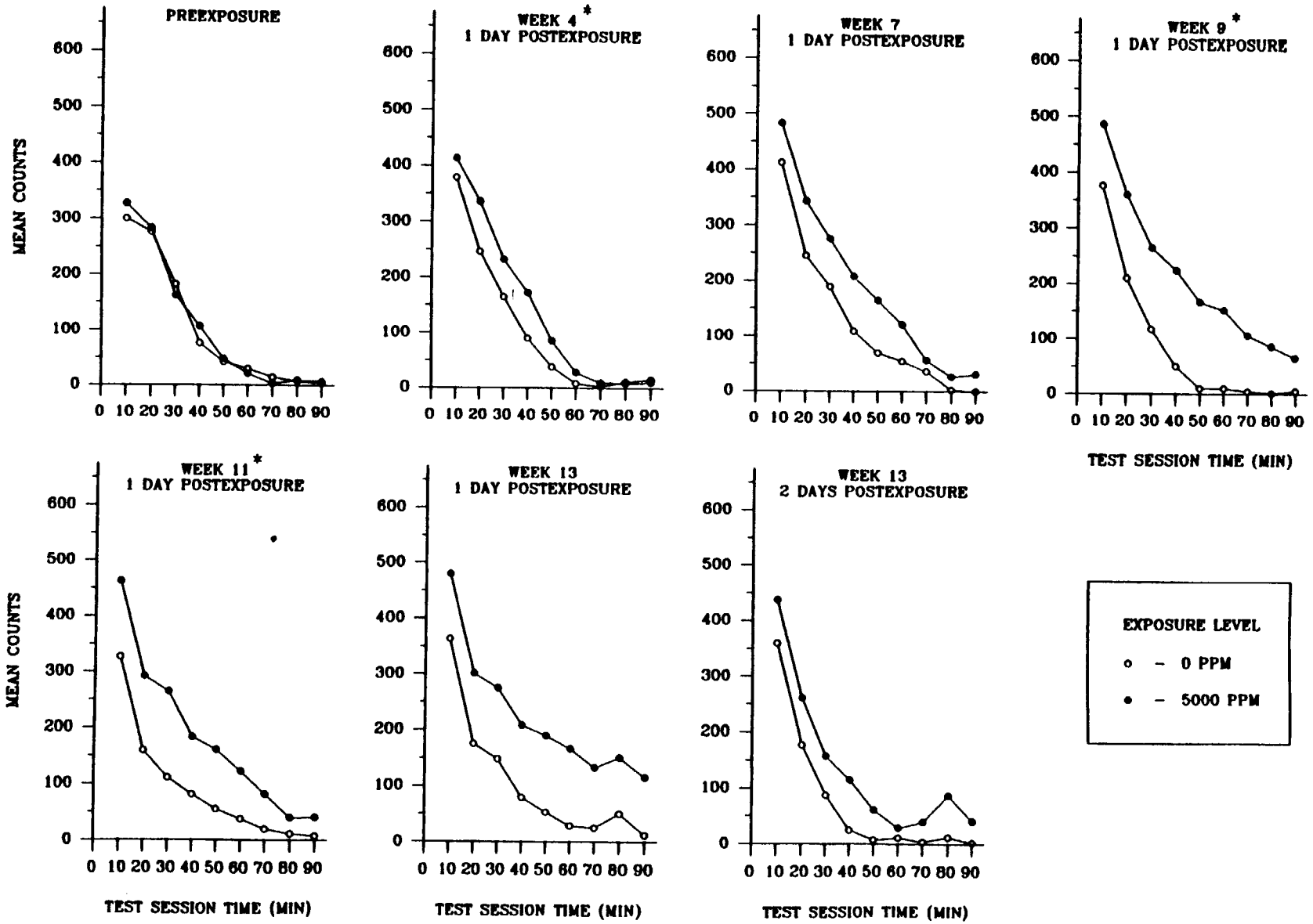
GROUP: (PPM)	BLOCK 1 0	5000
0 TO 10 MINUTES		
MEAN	458.1	526.5
S.D.	91.93	144.95
N	15	15
10 TO 20 MINUTES		
MEAN	290.1	301.7
S.D.	101.48	94.91
N	15	15
20 TO 30 MINUTES		
MEAN	226.6	268.7
S.D.	102.48	102.90
N	15	15
30 TO 40 MINUTES		
MEAN	175.2	175.1
S.D.	115.81	140.30
N	15	15
40 TO 50 MINUTES		
MEAN	144.0	135.1
S.D.	148.42	145.54
N	15	15
50 TO 60 MINUTES		
MEAN	61.5	46.5
S.D.	88.81	106.94
N	15	15
60 TO 70 MINUTES		
MEAN	47.5	35.5
S.D.	75.21	86.17
N	15	15
70 TO 80 MINUTES		
MEAN	16.3	19.1
S.D.	36.63	31.95
N	15	15
80 TO 90 MINUTES		
MEAN	19.5	2.6
S.D.	43.30	5.96
N	15	15

No statistically significant exposure level effect on the time versus activity profiles of the data was indicated.

RPT_NT:IPASRF17.SMA

FIGURE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

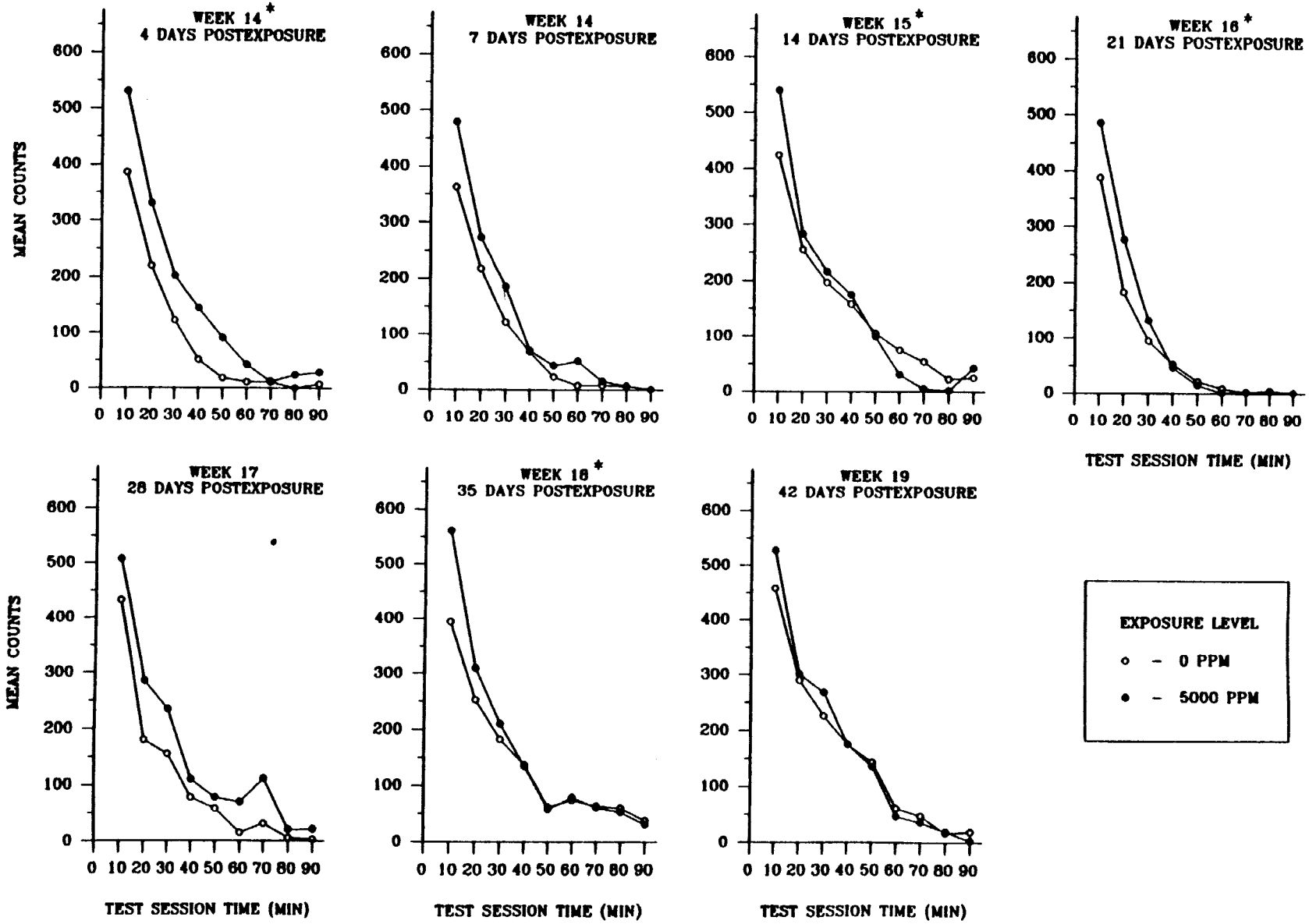
BLOCK 1 - TEST SESSION ACTIVITY VERSUS TIME, SUM OF ALL COUNTERS



* A statistically significant exposure level effect on the time versus activity profile of the data was indicated at this test period.

FIGURE 3 (CONTINUED)
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

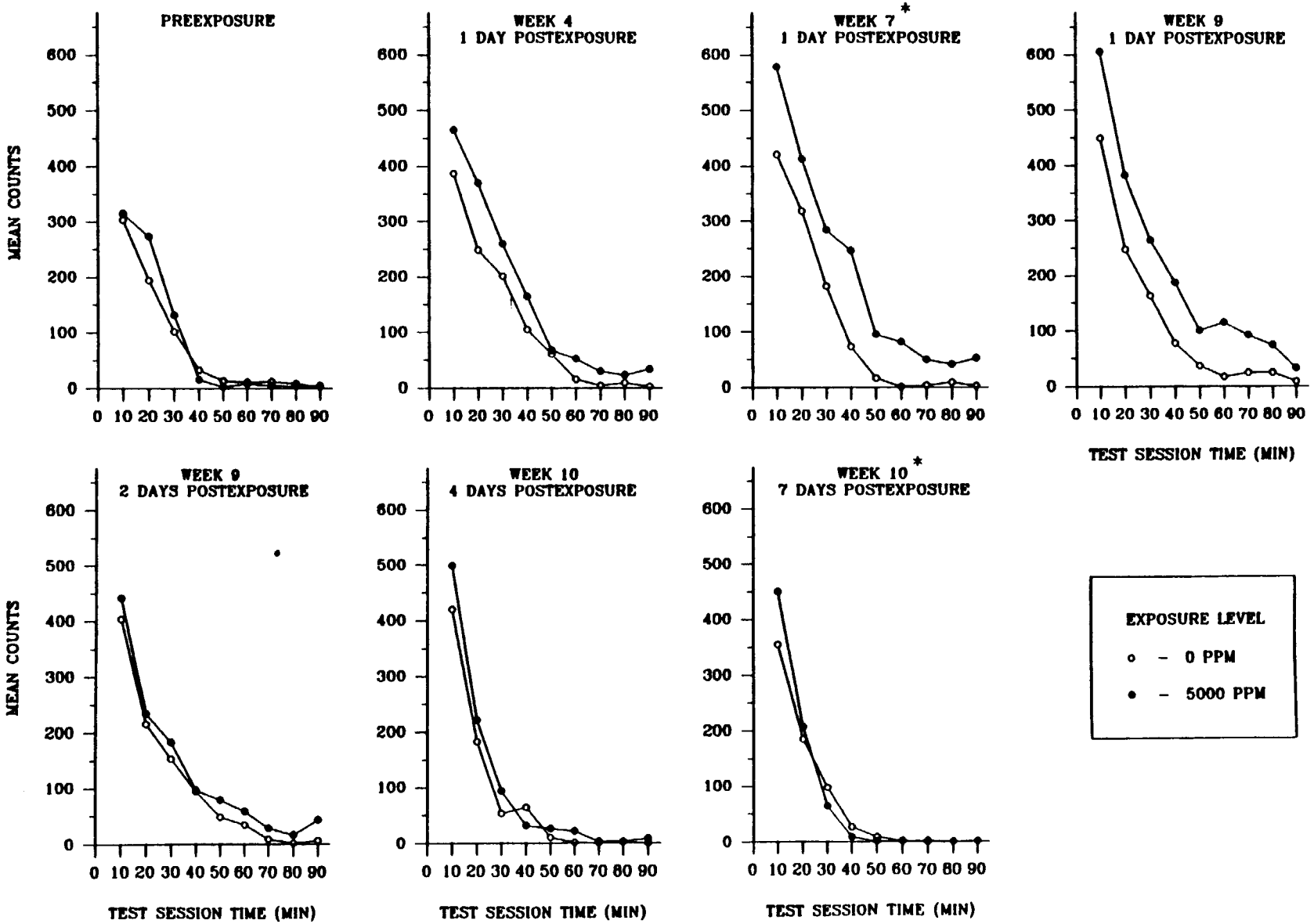
BLOCK 1 - TEST SESSION ACTIVITY VERSUS TIME, SUM OF ALL COUNTERS



* A statistically significant exposure level effect on the time versus activity profile of the data was indicated at this test period.

FIGURE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

BLOCK 2 - TEST SESSION ACTIVITY VERSUS TIME, SUM OF ALL COUNTERS



* A statistically significant exposure level effect on the time versus activity profile of the data was indicated at this test period.

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Individual Animal Fate and Clinical Observations Data

(8 Pages)

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TABLE 1

ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL ANIMAL FATE AND CLINICAL OBSERVATIONS DATA

ABBREVIATIONS

Abbreviations for the locations of clinical signs appear in parentheses next to the clinical signs in the following tables. The number included with the abbreviation is the number of times that clinical sign for that location was entered on the computer for that animal during the course of the study. The following is a list of three letter abbreviations for locations of clinical signs that may appear in the individual clinical observations tables.

ABD ABDOMEN
ANS ANUS
AXB AXILLA-BOTH
AXL AXILLA-LEFT
AXR AXILLA-RIGHT
BCK BACK
BDY ENTIRE BODY
CHS CHEST
EAB EAR-BOTH
EAL EAR-LEFT
EAR EAR-RIGHT
ELB EYELID-BOTH
ELL EYELID-LEFT
ELR EYELID-RIGHT
EYB EYE-BOTH
EYL EYE-LEFT
EYR EYE-RIGHT
FAC FACE
GEN GENITAL
HED HEAD
HPB HIP-BOTH
HPL HIP-LEFT
HPR HIP-RIGHT
INB INGUINAL-BOTH
INL INGUINAL-LEFT
INR INGUINAL-RIGHT
LAL LEGS-ALL
LFB LEG-FORE-BOTH
LFL LEG-FORE-LEFT
LFR LEG-FORE-RIGHT
LHB LEG-HIND-BOTH
LHL LEG-HIND-LEFT
LHR LEG-HIND-RIGHT
LNS LOCATION NOT SPECIFIED
MTH MOUTH
MUL MULTIPLE AREAS,NOS*
NCK NECK
NSE NOSE
PAL PAWS-ALL
PFB PAW-FORE-BOTH
PFL PAW-FORE-LEFT
PFR PAW-FORE-RIGHT
PHB PAW-HIND-BOTH
PHL PAW-HIND-LEFT
PHR PAW-HIND-RIGHT
PNS PENIS
SCR SCROTUM
SDB SIDE-BOTH
SDL SIDE-LEFT
SDR SIDE-RIGHT
SHB SHOULDER-BOTH
SHL SHOULDER-LEFT
SHR SHOULDER-RIGHT
TAL TAIL
TEE TEETH
TRA TREATMENT AREA
TSB TESTIS-BOTH
TSL TESTIS-LEFT
TSR TESTIS-RIGHT
VAG VAGINA
*NOS NOT OTHERWISE SPECIFIED

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL ANIMAL FATE AND CLINICAL OBSERVATIONS

DOSAGE GROUP	ANIMAL	CATEGORY	#	STUDY DAYS	FINDING
0 PPM					
	3813	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3815	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3817	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3821	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3823	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3826	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3827	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3829	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3833	NORMAL	13	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
		BODY	7	18- 60	URINE STAINS
	3834	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3838	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3839	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3840	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3842	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3844	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL ANIMAL FATE AND CLINICAL OBSERVATIONS

DOSAGE GROUP	ANIMAL	CATEGORY	#	STUDY DAYS	FINDING
0 PPM					
	3845	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3846	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3848	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3849	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3852	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3855	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3856	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3863	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3864	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3867	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3869	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3871	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3872	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3875	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3877	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
5000 PPM					
	3809	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL ANIMAL FATE AND CLINICAL OBSERVATIONS

DOSAGE GROUP	ANIMAL	CATEGORY	#	STUDY DAYS	FINDING
5000 PPM					
	3809	FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3810	NORMAL	19	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	1	46	SWOLLEN PERIOCULAR TISSUE (EYR 1)
	3811	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3814	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3816	NORMAL	15	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	5	25- 53	SWOLLEN PERIOCULAR TISSUE (EYB 5)
	3818	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3819	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3820	NORMAL	15	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	1	60	PERIOCULAR ENCRUSTATION (EYR 1)
			5	32- 60	SWOLLEN PERIOCULAR TISSUE (EYB 5)
	3822	NORMAL	18	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	2	53- 60	SWOLLEN PERIOCULAR TISSUE (EYR 2)
	3824	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3825	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3828	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3830	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3832	NORMAL	20	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL ANIMAL FATE AND CLINICAL OBSERVATIONS

DOSAGE GROUP	ANIMAL	CATEGORY	#	STUDY DAYS	FINDING
5000 PPM					
	3832	FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
	3837	NORMAL	16	0-130	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	134	BLOCK 1 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	4	53- 74	SWOLLEN PERIOCULAR TISSUE (EYB 4)
	3841	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3843	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3847	NORMAL	10	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	1	32	SWOLLEN PERIOCULAR TISSUE (EYB 1)
	3851	NORMAL	10	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	1	60	PERIOCULAR ENCRUSTATION (EYR 1)
	3853	NORMAL	8	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	3	25- 39	SWOLLEN PERIOCULAR TISSUE (EYB 3)
	3854	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3857	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3860	NORMAL	6	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		BODY	5	32- 60	URINE STAINS
	3861	NORMAL	10	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	1	60	PERIOCULAR ENCRUSTATION (EYL 1)
	3862	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3865	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL ANIMAL FATE AND CLINICAL OBSERVATIONS

DOSAGE GROUP	ANIMAL	CATEGORY	#	STUDY DAYS	FINDING
5000 PPM					
	3866	NORMAL	11	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
	3870	NORMAL	10	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		BODY	1	60	URINE STAINS
	3873	NORMAL	8	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		BODY	3	46- 60	URINE STAINS
	3874	NORMAL	6	0- 67	NO SIGNIFICANT CLINICAL OBSERVATIONS
		FATE	1	74	BLOCK 2 - SCHEDULED SACRIFICE
		EYES/EARS/NOSE	5	32- 60	SWOLLEN PERIOCULAR TISSUE (EYB 5)

TMOD_RPT:IPASRF.CLI

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Individual Body Weight Data Collected Weekly During the Exposure Regimen

(7 Pages)

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TABLE 1

ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHT DATA COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN

ABBREVIATIONS

The following is a list of abbreviations or words that appear in the individual body weight tables.

no bwt. = indicates that no body weight was collected for the animal at the period in which this abbreviation appears.

dead = indicates that the animal died prior to the period in which this word appears.

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN (GRAMS)
FEMALES GROUP: 0 PPM

WEEK	0	1	2	3	4	5	6	7	8	9
ANIMAL										
3813	114.7	119.6	127.4	134.9	143.1	151.7	159.3	164.5	169.6	170.8
3815	117.6	124.5	132.1	138.9	148.2	157.2	157.9	165.7	170.2	169.4
3817	121.2	126.6	135.8	144.3	151.2	158.7	167.3	176.2	179.6	180.4
3821	124.9	131.8	141.2	146.4	157.6	165.2	171.2	178.3	183.4	184.4
3823	107.9	115.7	125.8	137.9	148.3	154.1	162.6	166.3	179.6	177.0
3826	104.7	108.8	114.8	119.3	128.8	132.3	138.8	142.6	145.3	146.2
3827	124.9	133.1	142.5	150.7	159.7	169.9	176.4	180.0	188.0	189.7
3829	119.9	128.7	142.8	148.8	160.6	168.1	175.4	180.3	185.1	188.4
3833	106.7	110.9	114.9	123.5	128.3	134.6	143.3	149.3	150.2	151.4
3834	128.5	132.6	138.4	147.2	154.9	162.8	167.6	173.2	174.7	178.9
3838	109.1	115.0	126.2	137.2	147.9	151.4	158.9	164.7	169.5	171.2
3839	124.5	132.4	139.3	150.4	154.7	160.1	170.1	175.7	176.1	182.3
3840	122.8	130.2	138.9	144.5	155.1	160.1	168.7	174.4	176.9	183.3
3842	116.5	122.8	133.3	144.1	154.6	163.4	164.9	172.4	177.6	183.6
3844	123.2	126.7	135.5	144.9	153.7	160.4	168.1	171.3	175.8	183.8
3845	114.0	118.7	126.9	136.1	141.6	143.9	152.6	157.2	157.5	158.8
3846	124.2	132.0	135.5	141.4	143.1	149.5	157.1	163.1	161.7	166.5
3848	125.5	132.6	143.9	148.1	159.7	164.3	171.6	178.1	178.1	184.1
3849	119.1	127.2	134.9	143.8	149.2	154.8	164.4	165.2	169.0	173.4
3852	122.1	129.6	140.0	151.9	159.3	167.2	173.6	178.9	185.7	187.2
3855	120.0	127.8	134.0	145.9	154.3	162.8	169.7	174.1	177.0	178.4
3856	121.4	130.2	139.9	149.8	160.9	168.7	179.1	183.3	184.6	190.1
3863	117.3	124.2	136.9	147.7	160.8	166.9	173.9	183.4	184.3	181.8
3864	122.8	130.5	137.8	147.1	155.2	166.5	172.4	176.5	182.7	187.8
3867	126.3	130.8	141.9	150.1	156.6	163.0	166.6	171.2	172.2	177.3
3869	116.7	125.3	131.9	141.4	151.2	162.0	168.4	168.6	172.9	172.6
3871	116.8	127.8	143.0	150.7	162.7	168.2	176.6	178.6	186.1	187.9
3872	114.6	120.0	131.8	135.7	143.6	153.5	161.3	163.4	168.7	173.7
3875	116.9	123.6	133.6	139.9	147.0	155.5	160.9	164.5	170.0	173.9
3877	124.0	133.9	140.6	148.5	159.3	163.1	170.3	175.9	177.6	184.1
MEAN	119.0	125.8	134.7	143.0	151.7	158.7	165.6	170.6	174.3	177.3
S.D.	6.09	6.74	7.46	7.71	8.68	9.38	9.30	9.51	10.27	10.79
N	30	30	30	30	30	30	30	30	30	30

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN (GRAMS)
FEMALES GROUP: 0 PPM

WEEK	10	11	12	13
ANIMAL				
3813	180.6	181.1	186.6	188.0
3815	177.7	176.6	179.8	181.3
3817	194.4	190.2	198.2	199.7
3821	191.5	196.1	199.2	203.7
3823	178.9	181.7	182.1	185.2
3826	149.2	146.7	152.8	154.4
3827	196.4	193.2	196.1	196.5
3829	191.5	190.7	196.3	199.0
3833	160.1	160.2	167.9	167.9
3834	182.6	183.1	184.9	190.5
3838	172.4	171.6	178.2	181.4
3839	187.7	186.9	191.2	191.1
3840	186.8	185.8	189.4	192.6
3842	187.8	185.7	193.1	197.4
3844	183.8	185.9	188.6	193.7
3845	no bwt.	dead		
3846	no bwt.	dead		
3848	no bwt.	dead		
3849	no bwt.	dead		
3852	no bwt.	dead		
3855	no bwt.	dead		
3856	no bwt.	dead		
3863	no bwt.	dead		
3864	no bwt.	dead		
3867	no bwt.	dead		
3869	no bwt.	dead		
3871	no bwt.	dead		
3872	no bwt.	dead		
3875	no bwt.	dead		
3877	no bwt.	dead		
MEAN	181.4	181.0	185.6	188.1
S.D.	12.84	13.03	12.45	13.00
N	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN (GRAMS)
FEMALES GROUP: 5000 PPM

WEEK	0	1	2	3	4	5	6	7	8	9
ANIMAL										
3809	118.5	124.0	136.9	146.1	160.9	162.9	174.1	180.3	183.2	191.7
3810	107.3	109.9	120.4	135.6	142.6	150.8	156.1	163.5	169.9	170.0
3811	117.7	119.0	132.7	145.3	157.2	168.8	174.1	180.6	185.9	189.5
3814	124.4	125.1	142.0	151.1	162.2	171.6	175.9	185.4	194.7	195.9
3816	119.2	123.8	140.0	155.4	158.2	171.0	177.1	183.3	192.4	183.5
3818	114.3	115.7	127.7	142.5	145.4	158.0	164.4	166.2	178.2	182.2
3819	112.4	116.5	131.3	147.1	159.5	167.4	174.2	179.2	182.6	190.6
3820	112.7	115.2	124.5	139.8	152.2	157.0	163.1	168.8	174.6	180.9
3822	117.5	123.0	131.8	145.6	154.3	160.9	172.4	174.9	178.9	183.5
3824	123.1	123.9	133.1	152.4	165.5	175.1	181.3	185.8	189.2	196.8
3825	112.5	116.7	130.0	141.3	155.4	167.9	172.1	180.0	188.6	189.3
3828	106.5	109.4	121.2	134.7	150.8	162.9	175.0	183.7	182.8	193.1
3830	111.3	113.1	129.8	141.5	157.7	166.6	171.5	178.2	182.2	191.3
3832	117.0	124.6	136.2	152.1	165.4	174.1	177.6	188.1	193.8	203.8
3837	123.4	126.7	135.6	153.5	164.6	169.9	171.0	179.9	185.3	190.8
3841	127.1	126.3	141.8	162.1	172.5	180.5	190.9	192.4	200.1	207.6
3843	111.9	117.1	130.5	142.0	150.4	157.1	164.7	169.9	179.7	181.6
3847	118.0	119.4	129.5	141.4	148.3	158.4	166.3	165.3	174.1	177.6
3851	120.4	122.7	133.4	144.0	154.5	162.5	172.7	174.8	186.4	190.1
3853	115.8	119.6	129.5	142.5	153.0	163.4	170.4	172.2	180.2	182.6
3854	121.9	124.5	137.8	150.7	157.4	163.8	172.6	174.6	181.4	182.0
3857	122.3	125.2	137.3	158.1	169.9	178.5	186.0	189.9	196.1	198.1
3860	117.8	124.4	140.6	156.5	166.0	173.1	185.4	189.8	191.9	198.3
3861	121.7	123.4	137.0	150.6	160.7	167.8	176.5	179.1	186.8	192.1
3862	109.6	110.8	122.4	136.9	151.5	162.1	170.3	174.1	183.1	190.0
3865	124.1	125.8	136.2	153.9	160.9	172.6	177.6	182.4	188.9	193.4
3866	119.6	121.0	132.7	146.4	154.0	163.4	170.2	174.8	184.9	188.4
3870	112.7	116.1	130.5	147.6	158.1	165.1	172.6	176.1	185.1	186.3
3873	121.8	126.5	145.7	158.6	168.9	174.0	173.5	178.8	182.5	185.2
3874	120.6	123.9	138.3	155.1	167.4	176.5	182.8	188.1	192.5	203.2
MEAN	117.4	120.4	133.2	147.7	158.2	166.8	173.7	178.7	185.2	189.7
S.D.	5.33	5.23	6.22	7.18	7.35	7.08	7.15	7.55	6.86	8.16
N	30	30	30	30	30	30	30	30	30	30

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED WEEKLY DURING THE EXPOSURE REGIMEN (GRAMS)
FEMALES GROUP: 5000 PPM

WEEK	10	11	12	13
ANIMAL				
3809	188.7	193.4	192.6	190.8
3810	172.2	178.7	184.8	182.3
3811	192.5	192.0	194.6	198.0
3814	202.2	200.7	204.8	207.9
3816	196.9	197.8	202.6	199.3
3818	186.7	185.5	191.1	193.9
3819	191.6	192.8	197.0	193.2
3820	183.2	184.1	186.9	188.4
3822	189.9	190.5	195.2	193.1
3824	198.4	198.9	204.4	208.2
3825	197.4	197.6	198.9	204.3
3828	194.5	203.0	201.1	204.5
3830	192.0	193.7	200.3	203.0
3832	204.4	208.4	209.6	215.0
3837	195.9	195.9	198.2	197.1
3841	no bwt.	dead		
3843	no bwt.	dead		
3847	no bwt.	dead		
3851	no bwt.	dead		
3853	no bwt.	dead		
3854	no bwt.	dead		
3857	no bwt.	dead		
3860	no bwt.	dead		
3861	no bwt.	dead		
3862	no bwt.	dead		
3865	no bwt.	dead		
3866	no bwt.	dead		
3870	no bwt.	dead		
3873	no bwt.	dead		
3874	no bwt.	dead		
MEAN	192.4	194.2	197.5	198.6
S.D.	7.94	7.60	6.81	8.67
N	15	15	15	15

TMOD_RPT:IPASRF.BWI

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Individual Body Weight Data Collected Prior to Motor Activity Testing

(19 Pages)

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TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
PREEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	110.44	112.12	113.82	117.32	101.24	99.80	120.04	113.92	99.84	118.40
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	101.20	120.50	116.34	111.14	116.30					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	113.72	103.82	111.56	117.64	115.12	107.12	106.72	109.80	112.02	118.34
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	107.20	103.36	105.52	112.34	118.26					

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	108.00	118.06	119.34	109.80	113.18	111.42	117.10	109.42	115.88	116.28
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	110.98	108.40	106.72	107.96	115.68					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	120.64	105.88	108.72	113.16	112.32	115.66	116.28	113.68	114.94	101.98
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	115.82	113.88	107.62	112.22	115.68					

RPT_NT:IPASRF1.IFO

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TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	144.80	152.86	154.74	156.36	150.88	131.46	166.56	163.92	134.48	161.76
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	149.82	159.04	158.38	156.70	157.08					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	161.00	142.76	161.50	165.00	166.28	150.42	160.14	152.28	156.44	166.70
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	155.14	153.46	156.86	168.40	165.00					

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	144.64	149.22	160.60	153.12	159.86	159.74	161.80	162.88	160.92	157.46
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	154.70	165.60	147.82	151.72	160.60					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	172.52	156.08	152.80	158.60	156.78	160.80	168.18	167.76	161.90	154.58
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	166.68	158.02	159.62	172.60	166.80					

RPT_NT:IPASRF2.IFO

04/18/94

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	163.96	163.54	177.64	179.08	167.56	142.20	185.42	181.70	148.16	176.64
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	166.58	175.16	175.68	173.28	172.60					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	182.30	168.70	182.88	188.74	187.62	172.74	182.80	171.44	180.00	190.30
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	184.08	184.26	180.06	192.06	185.52					

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	159.90	164.26	178.02	169.58	178.02	175.92	183.28	185.00	179.60	171.98
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	168.14	184.12	165.94	169.90	178.24					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	197.44	172.66	173.80	177.48	174.40	179.72	195.10	189.06	182.02	176.40
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	187.78	181.46	182.20	179.74	189.74					

RPT_NT:IPASRF3.IFO

04/18/94

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	174.12	171.54	185.02	190.18	178.02	147.92	192.16	192.02	157.64	179.80
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	172.34	179.82	184.82	183.78	185.28					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	187.26	172.04	190.40	196.70	194.66	181.64	187.52	179.98	183.38	197.40
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	194.08	193.60	192.66	205.46	195.78					

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	162.12	166.08	184.58	173.60	193.26	179.40	190.42	184.24	188.04	176.36
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	174.18	185.64	175.00	174.30	184.80					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	206.24	180.60	179.64	191.52	184.08	187.30	201.74	197.22	188.94	189.66
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	196.46	192.06	185.96	183.50	200.84					

RPT_NT:IPASRF4.IFO

04/18/94

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 9 - 2 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	160.14	164.30	179.82	171.06	187.64	180.00	191.28	184.80	186.66	173.62
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	172.88	187.52	173.66	174.30	184.68					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	201.64	183.16	178.46	185.80	181.02	183.68	201.06	193.16	189.76	187.10
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	196.34	189.14	183.84	181.30	199.18					

RPT_NT:IPASRF5.IFO

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 10 - 4 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	161.74	165.80	182.52	173.30	189.74	180.44	193.68	185.64	186.14	175.26
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	178.36	188.80	174.22	177.46	183.60					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	204.08	184.48	182.54	192.36	182.22	186.80	203.08	198.72	192.64	194.00
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	199.92	189.94	189.02	184.32	196.26					

RPT_NT:IPASRF6.IFO

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 10 - 7 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL NUMBERS	3845	3846	3848	3849	3852	3855	3856	3863	3864	3867
Body weight	162.22	168.78	184.20	174.72	188.44	179.68	192.72	184.58	184.84	179.84
ANIMAL NUMBERS	3869	3871	3872	3875	3877					
Body weight	176.72	192.00	177.66	174.52	185.26					

BLOCK 2 GROUP:5000 PPM

ANIMAL NUMBERS	3841	3843	3847	3851	3853	3854	3857	3860	3861	3862
Body weight	206.06	189.34	186.60	194.70	185.96	190.42	208.34	197.56	193.46	195.96
ANIMAL NUMBERS	3865	3866	3870	3873	3874					
Body weight	205.54	192.84	192.74	188.16	199.06					

RPT_NT:IPASRF7.IFO

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 11 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	182.14	176.06	193.40	195.14	179.40	152.00	190.22	191.50	159.76	181.90

ANIMAL NUMBERS	3838	3839	3840	3842	3844
Body weight	175.66	189.74	185.72	188.24	186.08

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	193.70	180.84	194.18	199.82	197.38	187.24	195.26	182.38	193.44	201.10

ANIMAL NUMBERS	3825	3828	3830	3832	3837
Body weight	196.14	197.78	195.32	206.22	195.40

RPT_NT:IPASRF8.IFO

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 13 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	187.08	184.36	201.00	206.56	188.42	159.44	200.40	203.60	169.62	192.12
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	188.36	193.80	195.62	198.58	196.84					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	196.32	184.42	199.64	210.24	202.56	194.72	198.22	193.36	197.72	206.18
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	203.52	202.10	202.48	219.68	197.38					

RPT_NT:IPASRF9.IFO

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 13 - 2 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	187.88	183.88	200.70	204.62	184.42	159.10	197.66	201.82	170.02	190.66

ANIMAL NUMBERS

ANIMAL NUMBERS	3838	3839	3840	3842	3844
Body weight	187.70	192.98	189.66	197.48	193.94

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	191.32	184.80	201.02	209.60	200.64	193.18	199.26	190.58	193.36	210.86

ANIMAL NUMBERS	3825	3828	3830	3832	3837
Body weight	202.56	203.92	203.06	214.16	199.12

RPT_NT:IPASRF10.IFO

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 14 - 4 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	187.22	182.44	200.36	201.66	184.70	160.20	197.88	199.10	168.92	190.86

ANIMAL NUMBERS

ANIMAL NUMBERS	3838	3839	3840	3842	3844
Body weight	185.18	193.78	188.56	197.86	191.78

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	194.44	187.14	202.34	215.20	202.20	196.92	200.82	194.88	198.42	213.46

ANIMAL NUMBERS	3825	3828	3830	3832	3837
Body weight	208.06	205.16	207.30	213.02	202.42

RPT_NT:IPASRF11.IFO

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 14 - 7 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	189.84	185.22	204.14	203.90	168.82	161.00	201.20	197.84	169.34	191.86
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	185.62	195.36	187.08	200.82	193.52					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	197.22	188.86	205.46	215.28	205.52	200.44	201.52	197.06	199.08	213.04
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	206.24	206.08	206.82	216.56	199.94					

RPT_NT:IPASRF12.IFO

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 15 - 14 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	189.58	187.06	206.04	200.28	186.74	158.86	199.12	203.32	167.20	193.22
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	189.08	195.00	190.56	199.28	195.92					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	198.26	183.26	205.28	213.20	206.94	200.56	200.22	197.84	200.24	212.18
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	207.68	205.34	204.36	217.36	203.56					

RPT_NT:IPASRF13.IFO

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 16 - 21 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	190.44	191.88	212.38	204.68	190.52	157.24	203.92	203.20	175.04	189.98
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	190.96	196.82	193.16	202.04	196.80					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	197.84	183.38	204.92	215.78	202.80	199.52	197.50	193.68	199.54	213.82
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	205.32	202.32	203.10	212.40	198.18					

RPT_NT:IPASRF14.IFO

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 17 - 28 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	193.16	190.72	209.86	204.44	189.60	157.48	206.58	206.08	175.70	192.54
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	187.96	198.08	194.48	200.98	197.78					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	199.12	184.18	203.52	212.36	200.82	200.90	196.56	193.44	201.30	213.78
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	207.24	207.68	205.06	209.92	203.80					

RPT_NT:IPASRF15.IFO

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 18 - 35 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	193.90	191.44	213.84	207.92	193.02	162.24	207.92	206.78	175.98	200.52
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	192.94	202.38	197.30	196.94	198.30					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	201.20	187.06	200.54	218.12	205.02	201.84	200.16	194.76	203.88	216.32
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	209.08	206.06	208.72	215.10	205.82					

RPT_NT:IPASRF16.IFO

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS

INDIVIDUAL BODY WEIGHTS COLLECTED PRIOR TO MOTOR ACTIVITY TESTING (GRAMS)
WEEK 19 - 42 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL NUMBERS	3813	3815	3817	3821	3823	3826	3827	3829	3833	3834
Body weight	193.50	194.82	215.94	207.76	195.06	166.92	205.22	208.42	176.28	201.02
ANIMAL NUMBERS	3838	3839	3840	3842	3844					
Body weight	197.30	200.56	197.82	198.88	199.84					

BLOCK 1 GROUP:5000 PPM

ANIMAL NUMBERS	3809	3810	3811	3814	3816	3818	3819	3820	3822	3824
Body weight	199.36	187.06	201.38	213.46	205.50	199.50	200.80	195.82	199.34	215.38
ANIMAL NUMBERS	3825	3828	3830	3832	3837					
Body weight	207.62	208.54	206.58	216.10	202.52					

RPT_NT:IPASRF17.IFO

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Motor Activity Individual Data and Information

(95 Pages)

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TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	254	242	238	179	186	135	85	3	2	1324
3815	151	187	103	0	3	30	0	0	4	478
3817	167	174	84	111	24	17	4	0	1	582
3821	117	58	32	0	0	0	0	0	0	207
3823	141	168	104	26	0	21	0	0	0	460
3826	162	169	1	4	20	22	18	3	0	399
3827	171	79	115	22	0	2	0	1	0	390
3829	223	159	97	91	16	3	9	0	0	598
3833	101	86	60	1	0	0	0	0	0	248
3834	114	135	128	55	1	0	0	5	3	441
3838	142	231	83	75	33	9	1	54	5	633
3839	185	166	136	55	28	0	2	0	0	572
3840	197	141	158	24	10	0	0	0	4	534
3842	132	92	127	0	0	3	0	4	12	370
3844	108	99	55	9	21	0	13	32	12	349
MEAN	157.7	145.7	101.4	43.5	22.8	16.1	8.8	6.8	2.9	505.7
S.D.	43.58	54.50	56.09	51.97	46.64	34.37	21.81	15.37	4.10	258.54
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	73	79	11	46	104	51	39	0	0	403
3815	44	42	7	0	0	1	0	0	2	96
3817	68	68	16	35	0	0	0	0	0	187
3821	57	6	7	0	0	0	0	0	0	70
3823	79	43	25	2	0	0	0	0	0	149
3826	54	56	0	0	0	0	0	0	0	110
3827	112	8	46	0	0	0	0	0	0	166
3829	63	58	34	15	0	0	0	0	0	170
3833	58	31	38	1	0	0	0	0	0	128
3834	95	31	33	5	0	0	0	0	0	164
3838	48	48	20	19	1	0	0	0	0	136
3839	78	36	23	3	0	0	0	0	0	140
3840	73	55	70	13	4	0	0	0	0	215
3842	90	31	46	0	0	0	0	0	0	167
3844	60	31	11	0	0	0	0	0	0	102
MEAN	70.1	41.5	25.8	9.3	7.3	3.5	2.6	.0	.1	160.2
S.D.	18.58	20.13	18.87	14.26	26.78	13.15	10.07	.00	.52	77.08
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	89	150	69	108	129	118	45	0	0	708
3815	67	132	40	0	0	18	0	0	12	269
3817	57	165	53	110	0	0	0	0	0	385
3821	60	20	12	0	0	0	0	0	0	92
3823	120	134	104	0	0	0	0	0	0	358
3826	68	88	1	0	2	3	2	0	0	164
3827	84	11	48	0	0	6	0	0	0	149
3829	96	146	64	44	0	6	0	0	0	356
3833	60	65	19	0	0	0	0	0	0	144
3834	62	86	87	8	0	0	0	0	0	243
3838	47	125	51	54	9	0	0	0	0	286
3839	56	32	54	0	6	0	0	0	0	148
3840	117	123	144	30	17	0	0	0	2	433
3842	55	27	63	0	0	3	0	0	0	148
3844	53	36	26	3	8	0	2	1	1	130
MEAN	72.7	89.3	55.7	23.8	11.4	10.3	3.3	.1	1.0	267.5
S.D.	23.17	53.72	36.72	38.81	32.91	30.19	11.57	.26	3.09	162.67
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	416	471	318	333	419	304	169	3	2	2435
3815	262	361	150	0	3	49	0	0	18	843
3817	292	407	153	256	24	17	4	0	1	1154
3821	234	84	51	0	0	0	0	0	0	369
3823	340	345	233	28	0	21	0	0	0	967
3826	284	313	2	4	22	25	20	3	0	673
3827	367	98	209	22	0	8	0	1	0	705
3829	382	363	195	150	16	9	9	0	0	1124
3833	219	182	117	2	0	0	0	0	0	520
3834	271	252	248	68	1	0	0	5	3	848
3838	237	404	154	148	43	9	1	54	5	1055
3839	319	234	213	58	34	0	2	0	0	860
3840	387	319	372	67	31	0	0	0	6	1182
3842	277	150	236	0	0	6	0	4	12	685
3844	221	166	92	12	29	0	15	33	13	581
MEAN	300.5	276.6	182.9	76.5	41.5	29.9	14.7	6.9	4.0	933.4
S.D.	64.62	120.13	96.68	102.43	105.53	77.02	43.15	15.49	5.81	480.60
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	228	214	125	14	0	9	0	0	11	601
3810	108	136	106	100	8	27	0	0	2	487
3811	135	47	0	12	2	0	0	52	0	248
3814	220	183	195	156	122	10	0	0	0	886
3816	169	91	93	136	0	7	0	0	0	496
3818	179	184	75	18	0	18	0	7	6	487
3819	203	112	9	1	0	15	0	0	2	342
3820	235	194	178	97	109	9	6	5	11	844
3822	152	203	6	0	5	1	2	2	10	381
3824	126	158	92	120	5	15	29	0	0	545
3825	127	64	84	51	50	18	0	0	0	394
3828	233	218	93	79	2	26	4	34	9	698
3830	243	158	115	4	0	0	0	3	0	523
3832	180	142	105	40	81	2	0	0	7	557
3837	153	148	107	76	72	46	0	0	0	602
MEAN	179.4	150.1	92.2	60.3	30.4	13.5	2.7	6.9	3.9	539.4
S.D.	45.36	52.80	55.62	52.82	44.13	12.50	7.49	15.21	4.56	174.00
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	68	78	17	1	0	3	0	0	8	175
3810	40	42	1	35	0	5	0	0	0	123
3811	49	10	0	7	0	0	0	0	0	66
3814	39	42	16	29	12	1	0	0	0	139
3816	81	32	30	11	0	0	0	0	0	154
3818	80	61	18	1	0	0	0	0	0	160
3819	67	22	0	0	0	0	0	0	0	89
3820	136	121	57	55	57	0	0	0	0	426
3822	67	31	0	0	0	0	0	0	0	98
3824	61	28	9	9	0	2	0	0	0	109
3825	69	20	14	13	0	0	0	0	0	116
3828	78	22	29	21	0	1	0	3	0	154
3830	59	39	17	0	0	0	0	0	0	115
3832	65	74	43	4	30	7	0	0	0	223
3837	99	70	79	29	14	11	0	0	0	302
MEAN	70.5	46.1	22.0	14.3	7.5	2.0	.0	.2	.5	163.3
S.D.	23.95	29.50	22.77	16.32	16.12	3.27	.00	.77	2.07	93.01
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	94	153	76	16	0	10	0	3	17	369
3810	44	66	3	57	0	11	0	0	3	184
3811	49	5	0	12	0	0	0	6	0	72
3814	114	113	127	104	17	12	0	0	0	487
3816	88	82	78	25	0	4	0	0	0	277
3818	104	146	39	12	0	0	0	0	0	301
3819	63	36	0	0	0	0	0	0	0	99
3820	139	150	72	64	59	0	0	0	0	484
3822	77	81	0	[illegible]	6	0	0	0	0	164
3824	64	79	55	17	0	12	0	0	0	227
3825	54	34	30	30	0	6	0	0	0	154
3828	87	115	62	72	0	10	2	16	0	364
3830	58	84	36	0	0	0	0	0	0	178
3832	39	84	75	27	41	4	0	0	7	277
3837	81	70	66	49	20	12	0	0	0	298
MEAN	77.0	86.5	47.9	32.3	9.5	5.4	.1	1.7	1.8	262.3
S.D.	28.08	43.32	37.11	30.65	17.98	5.23	.52	4.30	4.62	126.30
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	390	445	218	31	0	22	0	3	36	1145
3810	192	244	110	192	8	43	0	0	5	794
3811	233	62	0	31	2	0	0	58	0	386
3814	373	338	338	289	151	23	0	0	0	1512
3816	338	205	201	172	0	11	0	0	0	927
3818	363	391	132	31	0	18	0	7	6	948
3819	333	170	9	1	0	15	0	0	2	530
3820	510	465	307	216	225	9	6	5	11	1754
3822	296	315	6	0	11	1	2	2	10	643
3824	251	265	156	146	5	29	29	0	0	881
3825	250	118	128	94	50	24	0	0	0	664
3828	398	355	184	172	2	37	6	5[illegible]	9	1216
3830	360	281	168	4	0	0	0	[illegible]	0	816
3832	284	300	223	71	152	13	0	0	14	1057
3837	333	288	252	154	106	69	0	0	0	1202
MEAN	326.9	282.8	162.1	106.9	47.5	20.9	2.9	8.7	6.2	965.0
S.D.	79.63	112.55	102.74	91.22	74.01	18.43	7.53	19.13	9.57	364.57
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	172	36	27	3	0	0	0	0	0	238
3846	230	112	16	0	0	0	0	0	0	358
3848	153	106	86	0	0	0	0	0	0	345
3849	82	154	150	157	16	1	15	7	0	582
3852	121	177	52	0	98	10	1	0	8	467
3855	201	109	47	0	0	0	153	2	0	512
3856	116	80	104	43	0	0	0	1	0	344
3863	189	190	39	0	0	1	0	46	1	466
3864	151	78	0	0	10	86	1	23	3	352
3867	125	103	54	14	2	44	2	35	1	380
3869	158	86	57	4	0	0	0	1	0	306
3871	164	133	30	0	0	0	4	1	0	332
3872	168	106	104	36	0	6	0	2	0	422
3875	154	88	89	153	14	1	2	0	7	508
3877	160	50	90	48	27	0	0	0	0	375
MEAN	156.3	107.2	63.0	30.5	11.1	9.9	11.9	7.9	1.3	399.1
S.D.	36.23	42.58	40.09	53.28	25.40	23.89	39.23	14.64	2.64	91.65
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	77	0	0	0	0	0	0	0	0	77
3846	68	19	7	0	0	0	0	0	0	94
3848	85	35	16	0	0	0	0	0	0	136
3849	49	43	24	1	0	0	0	0	0	117
3852	89	30	0	0	4	2	0	0	0	125
3855	79	5	0	0	0	0	0	0	0	84
3856	70	44	31	1	0	0	0	0	0	146
3863	98	47	4	0	0	0	0	0	0	149
3864	65	11	0	0	0	0	0	0	0	76
3867	55	16	0	0	0	0	0	0	0	71
3869	73	42	16	0	0	0	0	0	0	131
3871	77	29	0	0	0	0	0	0	0	106
3872	75	22	55	0	0	0	0	0	0	152
3875	58	27	19	0	2	0	0	0	0	106
3877	67	17	37	8	0	0	0	0	0	129
MEAN	72.3	25.8	13.9	.7	.4	.1	.0	.0	.0	113.3
S.D.	12.95	14.65	16.81	2.06	1.12	.52	.00	.00	.00	27.91
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	72	12	0	0	0	0	0	0	0	84
3846	94	37	20	0	0	0	0	0	0	151
3848	79	72	32	0	0	0	0	0	0	183
3849	87	151	161	4	0	0	0	0	0	403
3852	91	79	2	0	5	7	0	0	0	184
3855	79	21	11	0	0	0	1	0	0	112
3856	62	42	42	8	0	0	0	0	0	154
3863	115	182	13	0	0	0	0	0	0	310
3864	41	19	0	0	0	0	0	7	0	67
3867	60	58	0	0	0	0	0	0	0	118
3869	76	45	11	0	0	0	0	0	0	132
3871	65	66	0	0	0	0	0	0	0	131
3872	87	93	61	0	0	0	0	0	0	241
3875	51	23	20	0	14	0	0	0	0	108
3877	63	17	11	16	14	0	0	0	0	121
MEAN	74.8	61.1	25.6	1.9	2.2	.5	.1	.5	.0	166.6
S.D.	18.74	49.70	41.35	4.50	4.96	1.81	.26	1.81	.00	89.85
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	321	48	27	3	0	0	0	0	0	399
3846	392	168	43	0	0	0	0	0	0	603
3848	317	213	134	0	0	0	0	0	0	664
3849	218	348	335	162	16	1	15	7	0	1102
3852	301	286	54	0	107	19	1	0	8	776
3855	359	135	58	0	0	0	154	2	0	708
3856	248	166	177	52	0	0	0	1	0	644
3863	402	419	56	0	0	1	0	46	1	925
3864	257	108	0	0	10	86	1	30	3	495
3867	240	177	54	14	2	44	2	35	1	569
3869	307	173	84	4	0	0	0	1	0	569
3871	306	228	30	0	0	0	4	1	0	569
3872	330	221	220	36	0	6	0	2	0	815
3875	263	138	128	153	30	1	2	0	7	722
3877	290	84	138	72	41	0	0	0	0	625
MEAN	303.4	194.1	102.5	33.1	13.7	10.5	11.9	8.3	1.3	679.0
S.D.	53.61	98.08	88.84	55.20	28.74	24.01	39.49	15.26	2.64	175.00
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	232	89	0	0	0	1	0	0	0	322
3843	103	175	129	44	0	9	0	6	0	466
3847	172	111	144	72	6	7	0	0	2	514
3851	139	121	101	0	0	1	0	6	3	371
3853	171	126	57	4	0	0	0	0	0	358
3854	103	115	90	0	13	11	0	10	17	359
3857	236	184	101	34	0	2	23	0	5	585
3860	163	223	72	0	0	13	26	0	0	497
3861	162	201	4	0	0	16	0	12	8	403
3862	130	185	106	0	0	13	0	6	15	455
3865	127	49	18	0	2	11	0	0	0	207
3866	232	160	186	21	0	0	1	1	0	601
3870	182	116	68	29	0	23	11	3	8	440
3873	187	129	100	0	16	0	0	0	0	432
3874	193	178	133	8	0	0	0	15	0	527
MEAN	168.8	144.1	87.3	14.1	2.5	7.1	4.1	3.9	3.9	435.8
S.D.	43.50	47.05	52.48	21.78	5.17	7.26	8.78	5.04	5.71	104.05
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	66	24	0	0	0	0	0	0	0	90
3843	47	29	0	0	0	0	0	0	0	76
3847	69	62	52	0	0	0	0	0	0	183
3851	44	16	0	0	0	0	0	0	0	60
3853	68	36	20	0	0	0	0	0	0	124
3854	62	18	0	0	5	1	0	0	0	86
3857	71	25	2	1	0	0	0	0	0	99
3860	116	78	0	0	0	0	0	0	0	194
3861	69	64	0	0	0	0	0	0	0	133
3862	48	65	10	0	0	0	0	0	0	123
3865	53	22	0	0	0	0	0	0	0	75
3866	74	48	17	0	0	0	0	0	0	139
3870	89	28	0	0	0	0	0	0	0	117
3873	95	46	32	0	0	0	0	0	0	173
3874	114	96	68	0	0	0	0	0	0	278
MEAN	72.3	43.8	13.4	.1	.3	.1	.0	.0	.0	130.0
S.D.	22.42	24.34	21.47	.26	1.29	.26	.00	.00	.00	57.53
N	15	15	15	15	15	15	15	15	15	15

TABLE 1
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
PREEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	72	56	0	0	0	0	0	0	0	128
3843	59	178	0	0	0	0	0	0	0	237
3847	56	52	105	0	0	0	0	0	0	213
3851	53	60	6	0	0	0	0	0	0	119
3853	82	89	50	2	0	0	0	0	0	223
3854	71	28	0	0	4	0	0	0	0	103
3857	84	88	20	6	0	0	0	0	0	198
3860	82	139	2	0	0	0	0	0	0	223
3861	74	71	0	0	0	0	0	0	0	145
3862	39	131	68	0	0	3	0	0	0	241
3865	35	28	0	0	0	5	0	0	0	68
3866	134	93	51	4	0	0	0	0	0	282
3870	105	59	0	0	0	11	0	0	6	181
3873	85	75	80	0	0	0	0	0	0	240
3874	77	131	77	0	0	0	2	0	0	287
MEAN	73.9	85.2	30.6	.8	.3	1.3	.1	.0	.4	192.5
S.D.	24.88	43.02	37.30	1.82	1.03	3.06	.52	.00	1.55	66.17
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	370	169	0	0	0	1	0	0	0	540
3843	209	382	129	44	0	9	0	6	0	779
3847	297	225	301	72	6	7	0	0	2	910
3851	236	197	107	0	0	1	0	6	3	550
3853	321	251	127	6	0	0	0	0	0	705
3854	236	161	90	0	22	12	0	10	17	548
3857	391	297	123	41	0	2	23	0	5	882
3860	361	440	74	0	0	13	26	0	0	914
3861	305	336	4	0	0	16	0	12	8	681
3862	217	381	184	0	0	16	0	6	15	819
3865	215	99	18	0	2	16	0	0	0	350
3866	440	301	254	25	0	0	1	1	0	1022
3870	376	203	68	29	0	34	11	3	14	738
3873	367	250	212	0	16	0	0	0	0	845
3874	384	405	278	8	0	0	2	15	0	1092
MEAN	315.0	273.1	131.3	15.0	3.1	8.5	4.2	3.9	4.3	758.3
S.D.	76.30	100.65	96.59	22.35	6.76	9.63	8.73	5.04	6.20	201.12
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF1.IMA

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	198	100	37	0	0	0	0	0	41	376
3815	224	167	96	89	149	23	0	0	0	748
3817	168	94	153	78	44	3	0	0	3	543
3821	185	88	126	25	0	0	0	0	0	424
3823	169	168	99	121	26	0	0	0	4	587
3826	242	124	63	0	0	0	0	2	0	431
3827	138	96	3	0	7	40	0	0	1	285
3829	210	129	100	132	26	0	0	0	0	597
3833	152	122	77	56	6	0	0	0	32	445
3834	194	150	91	71	90	0	0	6	41	643
3838	232	127	63	7	0	0	0	23	8	460
3839	190	191	95	33	36	0	0	0	0	545
3840	130	94	96	0	9	2	3	91	11	436
3842	133	141	102	71	0	0	0	0	0	447
3844	206	129	0	0	0	5	36	7	29	412
MEAN	184.7	128.0	80.1	45.5	26.2	4.9	2.6	8.6	11.3	491.9
S.D.	35.75	31.07	41.67	46.25	42.05	11.38	9.27	23.59	15.84	117.49
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	81	38	9	0	0	0	0	0	7	135
3815	97	20	28	10	14	0	0	0	0	169
3817	85	36	43	45	23	0	0	0	0	232
3821	69	44	43	8	0	0	0	0	0	164
3823	85	38	31	62	16	0	0	0	0	232
3826	92	30	6	0	0	0	0	0	0	128
3827	71	73	0	0	7	26	0	0	0	177
3829	140	21	30	83	7	0	0	0	0	281
3833	101	33	76	22	0	0	0	0	0	232
3834	114	79	41	23	3	0	0	0	0	260
3838	86	89	11	3	0	0	0	9	5	203
3839	153	101	56	10	0	0	0	0	0	320
3840	114	42	68	0	0	0	0	0	1	225
3842	85	50	57	1	0	0	0	0	0	193
3844	85	27	0	0	0	0	0	0	2	114
MEAN	97.2	48.1	33.3	17.8	4.7	1.7	.0	.6	1.0	204.3
S.D.	23.93	25.32	24.56	25.76	7.37	6.71	.00	2.32	2.14	58.33
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	91	51	21	0	0	0	0	0	14	177
3815	124	89	70	50	29	0	0	0	0	362
3817	96	58	92	37	14	0	0	0	0	297
3821	78	40	74	26	0	0	0	0	0	218
3823	130	138	64	97	17	0	0	0	0	446
3826	84	56	24	0	0	0	0	0	0	164
3827	75	47	2	0	11	22	0	0	6	163
3829	130	78	77	97	17	0	0	0	0	399
3833	90	70	49	23	0	0	0	0	6	238
3834	107	71	66	30	22	0	0	2	1	299
3838	115	84	18	0	0	0	0	14	10	241
3839	96	71	54	18	0	0	0	0	0	239
3840	94	66	87	0	0	0	2	2	5	256
3842	51	63	79	27	0	0	0	0	0	220
3844	92	74	0	0	0	0	2	1	9	178
MEAN	96.9	70.4	51.8	27.0	7.3	1.5	.3	1.3	3.4	259.8
S.D.	21.68	23.08	30.99	32.63	10.05	5.68	.70	3.59	4.64	86.24
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	370	189	67	0	0	0	0	0	62	688
3815	445	276	194	149	192	23	0	0	0	1279
3817	349	188	288	160	81	3	0	0	3	1072
3821	332	172	243	59	0	0	0	0	0	806
3823	384	344	194	280	59	0	0	0	4	1265
3826	418	210	93	0	0	0	0	2	0	723
3827	284	216	5	0	25	88	0	0	7	625
3829	480	228	207	312	50	0	0	0	0	1277
3833	343	225	202	101	6	0	0	0	38	915
3834	415	300	198	124	115	0	0	8	42	1202
3838	433	300	92	10	0	0	0	46	23	904
3839	439	363	205	61	36	0	0	0	0	1104
3840	338	202	251	0	9	2	5	93	17	917
3842	269	254	238	99	0	0	0	0	0	860
3844	383	230	0	0	0	5	38	8	40	704
MEAN	378.8	246.5	165.1	90.3	38.2	8.1	2.9	10.5	15.7	956.1
S.D.	60.49	58.14	90.39	101.36	55.28	22.89	9.80	25.71	20.41	229.21
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	212	263	176	189	173	103	66	7	0	1189
3810	190	113	43	0	0	0	0	0	0	346
3811	151	177	12	70	0	3	26	46	18	503
3814	260	249	131	21	0	3	6	1	3	674
3816	302	210	170	148	151	52	0	0	0	1033
3818	172	117	85	101	127	0	0	0	0	602
3819	182	87	145	36	22	0	0	0	0	472
3820	233	209	169	158	81	13	0	17	61	941
3822	180	154	46	14	99	43	1	1	0	538
3824	144	119	130	92	67	49	0	0	0	601
3825	237	164	150	152	28	0	0	0	1	732
3828	183	193	154	104	31	0	0	0	2	667
3830	174	184	102	104	25	0	0	2	0	591
3832	242	189	168	81	2	1	0	0	0	683
3837	206	242	174	122	2	1	0	20	27	794
MEAN	204.5	178.0	123.7	92.8	53.9	17.9	6.6	6.3	7.5	691.1
S.D.	43.27	52.92	53.84	56.75	59.19	30.43	17.76	12.74	16.80	222.40
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	96	40	75	35	23	13	0	1	0	283
3810	104	60	1	0	0	0	0	0	0	165
3811	61	34	0	0	0	0	1	0	0	96
3814	105	57	37	0	0	0	0	0	0	199
3816	155	35	68	54	12	26	0	0	0	350
3818	117	52	26	61	21	0	0	0	0	277
3819	73	29	60	2	7	0	0	0	0	171
3820	216	92	90	111	22	0	0	0	8	539
3822	76	59	17	0	23	20	0	0	0	195
3824	70	77	43	91	18	0	0	0	0	299
3825	76	60	50	49	1	0	0	0	0	236
3828	80	54	36	30	0	0	0	0	0	200
3830	116	102	94	12	2	0	0	0	0	326
3832	108	38	28	37	0	0	0	0	0	211
3837	159	140	60	13	0	0	0	9	0	381
MEAN	107.5	61.9	45.7	33.0	8.6	3.9	.1	.7	.5	261.9
S.D.	41.83	30.09	29.11	34.97	9.98	8.51	.26	2.32	2.07	108.76
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	93	217	135	135	100	59	8	1	0	748
3810	116	98	2	0	0	0	0	0	0	216
3811	59	71	0	0	0	0	26	6	0	162
3814	147	145	69	0	0	0	0	0	0	361
3816	136	88	90	59	22	21	0	0	0	416
3818	140	99	56	95	57	0	0	0	0	447
3819	71	64	94	12	8	0	0	0	0	249
3820	124	82	90	75	43	0	0	4	35	453
3822	77	61	20	0	49	16	0	0	0	223
3824	90	58	44	78	48	0	0	0	0	318
3825	96	92	52	77	19	0	0	0	0	336
3828	54	80	60	56	0	0	0	0	0	250
3830	94	123	68	41	6	0	0	0	0	332
3832	118	77	85	62	0	0	0	0	0	342
3837	89	89	73	10	0	0	0	10	0	271
MEAN	100.3	96.3	62.5	46.7	23.5	6.4	2.3	1.4	2.3	341.6
S.D.	28.97	40.57	36.18	41.92	29.87	15.95	6.88	2.97	9.04	141.25
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	401	520	386	359	296	175	74	9	0	2220
3810	410	271	46	0	0	0	0	0	0	727
3811	271	282	12	70	0	3	53	52	18	761
3814	512	451	237	21	0	3	6	1	3	1234
3816	593	333	328	261	185	99	0	0	0	1799
3818	429	268	167	257	205	0	0	0	0	1326
3819	326	180	299	50	37	0	0	0	0	892
3820	573	383	349	344	146	13	0	21	104	1933
3822	333	274	83	14	171	79	1	1	0	956
3824	304	254	217	261	133	49	0	0	0	1218
3825	409	316	252	278	48	0	0	0	1	1304
3828	317	327	250	190	31	0	0	0	2	1117
3830	384	409	264	157	33	0	0	2	0	1249
3832	468	304	281	180	2	1	0	0	0	1236
3837	454	471	307	145	2	1	0	39	27	1446
MEAN	412.3	336.2	231.9	172.5	85.9	28.2	8.9	8.3	10.3	1294.5
S.D.	95.99	92.98	110.37	120.37	95.27	51.64	22.56	16.28	27.10	420.25
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	190	156	169	76	1	6	0	0	0	598
3846	182	64	98	25	13	0	0	0	0	382
3848	225	166	113	99	113	64	0	0	0	780
3849	173	171	151	137	157	12	34	103	0	938
3852	275	218	127	0	0	0	0	0	5	625
3855	259	214	176	66	0	0	18	2	7	742
3856	196	102	0	0	0	0	0	0	6	304
3863	141	151	132	152	0	0	0	12	0	588
3864	140	61	20	0	0	0	0	0	0	221
3867	116	108	78	67	45	14	0	0	0	428
3869	192	112	67	80	53	0	0	0	0	504
3871	152	101	98	27	0	0	0	0	7	385
3872	244	95	132	58	10	0	0	0	2	541
3875	157	126	104	48	3	0	0	3	2	443
3877	216	118	132	94	94	35	0	0	0	689
MEAN	190.5	130.9	106.5	61.9	32.6	8.7	3.5	8.0	1.9	544.5
S.D.	46.37	47.67	49.63	47.07	50.30	18.03	9.64	26.47	2.81	192.96
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	84	57	35	37	0	0	0	0	0	213
3846	84	13	40	7	0	0	0	0	0	144
3848	96	88	51	15	84	30	0	0	0	364
3849	102	53	60	58	26	0	6	2	0	307
3852	97	62	33	0	0	0	0	0	0	192
3855	87	45	5	0	0	0	0	0	0	137
3856	76	15	0	0	0	0	0	0	2	93
3863	151	73	44	0	0	0	0	0	0	268
3864	62	23	7	0	0	0	0	0	0	92
3867	90	42	31	55	17	8	0	0	0	243
3869	92	41	27	32	10	0	0	0	0	202
3871	97	36	30	2	0	0	0	0	0	165
3872	104	40	84	14	0	0	0	0	0	242
3875	102	23	39	24	0	0	0	0	0	188
3877	86	26	27	19	60	13	0	0	0	231
MEAN	94.0	42.5	34.2	17.5	13.1	3.4	.4	.1	.1	205.4
S.D.	19.24	21.41	21.51	19.97	25.54	8.28	1.55	.52	.52	75.09
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	102	82	94	39	0	4	0	0	0	321
3846	81	47	68	8	0	0	0	0	0	204
3848	66	75	47	18	65	29	0	0	0	300
3849	114	112	107	144	65	0	16	15	0	573
3852	161	155	73	0	0	0	0	0	3	392
3855	132	111	122	0	0	0	0	0	0	365
3856	98	73	1	0	0	0	0	0	5	177
3863	121	67	82	0	0	0	0	0	0	270
3864	65	35	12	0	0	0	0	0	0	112
3867	87	71	54	53	20	7	0	0	0	292
3869	115	91	35	31	23	0	0	0	0	295
3871	70	38	30	10	0	0	0	0	5	153
3872	114	47	75	28	0	0	0	0	0	264
3875	87	53	47	20	0	0	0	0	0	207
3877	123	66	68	35	36	16	0	0	0	344
MEAN	102.4	74.9	61.0	25.7	13.9	3.7	1.1	1.0	.9	284.6
S.D.	27.04	32.24	33.68	36.83	23.55	8.25	4.13	3.87	1.85	112.84
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	376	295	298	152	1	10	0	0	0	1132
3846	347	124	206	40	13	0	0	0	0	730
3848	387	329	211	132	262	123	0	0	0	1444
3849	389	336	318	339	248	12	56	120	0	1818
3852	533	435	233	0	0	0	0	0	8	1209
3855	478	370	303	66	0	0	18	2	7	1244
3856	370	190	1	0	0	0	0	0	13	574
3863	413	291	258	152	0	0	0	12	0	1126
3864	267	119	39	0	0	0	0	0	0	425
3867	293	221	163	175	82	29	0	0	0	963
3869	399	244	129	143	86	0	0	0	0	1001
3871	319	175	158	39	0	0	0	0	12	703
3872	462	182	291	100	10	0	0	0	2	1047
3875	346	202	190	92	3	0	0	3	2	838
3877	425	210	227	148	190	64	0	0	0	1264
MEAN	386.9	248.2	201.7	105.2	59.7	15.9	4.9	9.1	2.9	1034.5
S.D.	70.22	91.65	93.16	89.23	95.34	34.37	14.87	30.83	4.67	354.32
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	229	133	89	3	0	0	0	3	33	490
3843	201	117	125	61	10	0	0	0	0	514
3847	215	199	210	114	120	149	101	78	129	1315
3851	180	239	186	181	84	107	51	11	2	1041
3853	220	142	147	24	0	0	9	55	1	598
3854	213	198	143	140	72	28	0	0	7	801
3857	166	213	169	72	0	1	2	0	1	624
3860	248	205	180	166	113	140	44	14	0	1110
3861	212	142	30	87	18	0	0	0	0	489
3862	213	155	57	115	0	0	0	0	4	544
3865	237	202	125	13	0	0	0	0	0	577
3866	328	242	213	48	0	13	0	0	0	844
3870	332	201	149	39	10	0	1	0	1	733
3873	254	264	124	109	13	0	0	0	35	799
3874	143	179	96	114	22	0	0	0	0	554
MEAN	226.1	188.7	136.2	85.7	30.8	29.2	13.9	10.7	14.2	735.5
S.D.	51.38	43.30	52.74	54.65	43.39	54.39	29.20	23.46	33.81	251.52
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	90	70	27	0	0	0	0	0	1	188
3843	122	30	50	23	3	0	0	0	0	228
3847	100	72	44	57	81	45	73	62	71	605
3851	105	62	44	70	28	36	5	0	0	350
3853	113	50	46	0	0	0	0	18	0	227
3854	99	63	61	36	29	9	0	0	0	297
3857	213	128	66	6	0	0	0	0	0	413
3860	119	73	99	64	61	53	37	4	0	510
3861	150	57	11	75	9	0	0	0	0	302
3862	123	46	13	10	0	0	0	0	0	192
3865	133	138	43	4	0	0	0	0	0	318
3866	131	110	47	12	0	1	0	0	0	301
3870	89	41	9	7	0	0	0	0	0	146
3873	171	65	91	55	1	0	0	0	22	405
3874	100	59	37	48	6	0	0	0	0	250
MEAN	123.9	70.9	45.9	31.1	14.5	9.6	7.7	5.6	6.3	315.5
S.D.	33.39	30.98	26.21	27.81	25.16	18.57	20.43	16.29	18.78	125.67
N	15	15	15	15	15	15	15	15	15	15

TABLE 2
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 4 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	100	74	54	0	0	0	0	5	20	253
3843	97	66	67	42	0	0	0	0	0	272
3847	141	147	188	108	145	75	67	55	130	1056
3851	93	176	118	105	60	46	24	6	2	630
3853	112	82	38	0	0	0	2	21	0	255
3854	94	81	63	80	19	7	0	0	5	349
3857	98	101	110	2	0	0	0	0	0	311
3860	129	142	144	131	73	67	25	6	0	717
3861	75	85	[illegible]	31	5	0	0	0	0	211
3862	75	60	[illegible]	12	0	0	0	0	0	169
3865	89	113	53	0	0	0	0	0	0	255
3866	194	135	91	23	0	2	0	0	0	445
3870	164	126	71	24	6	0	0	0	0	391
3873	134	171	83	94	11	0	0	0	24	517
3874	131	87	42	58	8	0	0	0	0	326
MEAN	115.1	109.7	77.3	47.3	21.8	13.1	7.9	6.2	12.1	410.5
S.D.	33.57	37.75	46.95	45.37	40.91	26.32	18.45	14.61	33.51	236.49
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	419	277	170	3	0	0	0	8	54	931
3843	420	213	242	126	13	0	0	0	0	1014
3847	456	418	442	279	346	269	241	195	330	2976
3851	378	477	348	356	172	189	80	17	4	2021
3853	445	274	231	24	0	0	11	94	1	1080
3854	406	342	267	256	120	44	0	0	12	1447
3857	477	442	345	80	0	1	2	0	1	1348
3860	496	420	423	361	247	260	106	24	0	2337
3861	437	284	56	193	32	0	0	0	0	1002
3862	411	261	92	137	0	0	0	0	4	905
3865	459	453	221	17	0	0	0	0	0	1150
3866	653	487	351	83	0	16	0	0	0	1590
3870	585	368	229	70	16	0	1	0	1	1270
3873	559	500	298	258	25	0	0	0	81	1721
3874	374	325	175	220	36	0	0	0	0	1130
MEAN	465.0	369.4	259.3	164.2	67.1	51.9	29.4	22.5	32.5	1461.5
S.D.	79.00	93.93	111.24	120.10	107.06	99.07	67.02	53.57	85.64	589.30
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF2.IMA

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	171	76	76	2	0	0	0	0	0	325
3815	252	216	158	121	95	118	102	26	1	1089
3817	249	149	100	99	170	153	133	8	0	1061
3821	198	159	155	69	1	29	0	0	0	611
3823	238	154	125	96	114	0	0	1	0	728
3826	151	122	81	24	0	14	0	0	0	392
3827	161	50	28	0	0	0	0	0	0	239
3829	206	173	153	45	12	0	0	0	0	589
3833	228	143	153	16	5	1	4	0	0	550
3834	163	88	68	91	122	0	0	0	0	532
3838	259	154	43	52	4	0	0	0	0	512
3839	228	124	117	81	86	158	24	0	0	818
3840	200	79	127	45	1	0	0	3	0	455
3842	156	86	81	89	0	0	0	0	0	412
3844	233	131	115	44	9	19	34	0	2	587
MEAN	206.2	126.9	105.3	58.3	41.3	32.8	19.8	2.5	.2	593.3
S.D.	38.00	44.20	41.58	37.59	58.51	58.28	41.37	6.83	.56	244.33
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	90	88	38	1	0	0	0	0	0	217
3815	93	66	32	36	11	15	55	0	0	308
3817	89	79	70	37	82	78	18	0	0	453
3821	106	52	85	17	0	23	0	0	0	283
3823	33	29	37	25	34	0	0	0	0	158
3826	78	24	15	1	0	2	0	0	0	120
3827	67	22	8	0	0	0	0	0	0	97
3829	159	53	45	25	0	0	0	0	0	282
3833	89	65	25	0	0	0	0	0	0	179
3834	84	44	7	89	20	0	0	0	0	244
3838	110	68	28	14	0	0	0	0	0	220
3839	101	66	35	33	22	28	22	0	0	307
3840	79	32	37	23	0	0	0	0	0	171
3842	105	37	10	3	0	0	0	0	0	155
3844	93	42	19	0	0	0	2	0	0	156
MEAN	91.7	51.1	32.7	20.3	11.3	9.7	6.5	.0	.0	223.3
S.D.	26.48	20.41	21.90	23.59	22.33	21.05	15.14	.00	.00	92.28
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	84	37	15	0	0	0	0	0	0	136
3815	159	104	51	90	36	47	69	0	0	556
3817	147	70	61	59	77	54	50	0	0	518
3821	126	80	101	36	0	21	0	0	0	364
3823	109	80	95	38	70	0	0	0	0	392
3826	74	45	48	0	0	5	0	0	0	172
3827	97	20	15	0	0	0	0	0	0	132
3829	165	105	55	29	3	0	0	0	0	357
3833	114	87	94	0	0	0	0	0	0	295
3834	78	39	10	67	25	0	0	0	0	219
3838	130	87	31	40	0	0	0	0	0	288
3839	92	75	43	69	53	50	8	0	0	390
3840	103	39	99	23	0	0	0	0	0	264
3842	92	77	19	4	0	0	0	0	0	192
3844	145	72	40	9	0	1	21	1	1	290
MEAN	114.3	67.8	51.8	30.9	17.6	11.9	9.9	.1	.1	304.3
S.D.	29.61	25.77	32.28	29.62	27.93	20.67	21.22	.26	.26	127.61
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	345	201	129	3	0	0	0	0	0	678
3815	504	386	241	247	142	180	226	26	1	1953
3817	485	298	231	195	329	285	201	8	0	2032
3821	430	291	341	122	1	73	0	0	0	1258
3823	380	263	257	159	218	0	0	1	0	1278
3826	303	191	144	25	0	21	0	0	0	684
3827	325	92	51	0	0	0	0	0	0	468
3829	530	331	253	99	15	0	0	0	0	1228
3833	431	295	272	16	5	1	4	0	0	1024
3834	325	171	85	247	167	0	0	0	0	995
3838	499	309	102	106	4	0	0	0	0	1020
3839	421	265	195	183	161	236	54	0	0	1515
3840	382	150	263	91	1	0	0	3	0	890
3842	353	200	110	96	0	0	0	0	0	759
3844	471	245	174	53	9	20	57	1	3	1033
MEAN	412.3	245.9	189.9	109.5	70.1	54.4	36.1	2.6	.3	1121.0
S.D.	73.89	77.60	83.75	82.89	105.66	96.77	74.68	6.81	.80	445.09
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	410	215	242	136	168	33	0	0	0	1204
3810	250	217	137	217	85	68	49	0	0	1023
3811	240	208	248	58	102	82	4	0	0	942
3814	440	301	195	176	205	192	26	9	100	1644
3816	347	253	197	172	202	100	55	1	0	1327
3818	185	147	73	17	96	114	36	0	0	668
3819	240	150	63	56	5	0	1	0	5	520
3820	183	165	174	125	74	13	0	0	0	734
3822	105	30	15	0	0	0	4	1	9	164
3824	153	77	80	98	89	20	0	6	0	523
3825	260	216	199	179	48	90	73	0	0	1065
3828	284	262	168	140	142	59	0	0	0	1055
3830	261	184	102	44	0	0	0	0	2	593
3832	300	250	176	171	173	239	211	134	10	1664
3837	305	229	207	137	91	108	80	105	185	1447
MEAN	264.2	193.6	151.7	115.1	98.7	74.5	35.9	17.1	20.7	971.5
S.D.	90.37	71.33	69.99	66.09	68.65	70.66	56.26	42.03	52.09	439.68
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	55	93	52	72	32	0	0	0	0	304
3810	135	58	113	101	13	2	13	0	0	435
3811	66	53	33	8	61	20	0	0	0	241
3814	76	34	84	23	42	48	0	0	0	307
3816	145	83	40	46	35	41	8	0	0	398
3818	78	51	27	8	26	34	0	0	0	224
3819	97	43	56	17	0	0	0	0	0	213
3820	87	114	98	55	0	0	0	0	0	354
3822	19	0	0	0	0	0	0	0	0	19
3824	87	57	69	40	4	0	0	0	0	257
3825	120	87	96	83	14	37	13	0	0	450
3828	117	74	49	67	58	10	0	0	0	375
3830	90	48	39	32	0	0	0	0	0	209
3832	70	27	38	25	53	56	43	47	7	366
3837	156	91	75	47	45	34	27	10	63	548
MEAN	93.2	60.9	57.9	41.6	25.5	18.8	6.9	3.8	4.7	313.3
S.D.	36.38	29.70	30.83	29.70	22.69	20.71	12.70	12.23	16.24	127.63
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	195	118	115	62	77	13	0	0	0	580
3810	135	95	59	117	27	6	26	0	0	465
3811	93	80	88	17	58	29	0	0	0	365
3814	312	144	130	63	117	113	5	2	6	892
3816	123	95	79	63	56	35	8	0	0	459
3818	122	118	38	7	76	38	22	0	0	421
3819	90	59	32	32	0	0	0	0	0	213
3820	80	102	80	61	8	0	0	0	0	331
3822	38	0	0	0	0	0	0	0	10	48
3824	92	53	44	40	3	0	0	6	0	238
3825	139	92	89	112	24	46	34	0	0	536
3828	107	89	76	59	45	18	0	0	0	394
3830	90	66	39	19	0	0	0	0	0	214
3832	130	105	64	90	93	100	66	52	0	700
3837	139	112	64	33	32	23	42	18	69	532
MEAN	125.7	88.5	66.5	51.7	41.1	28.1	13.5	5.2	5.7	425.9
S.D.	62.61	34.29	33.31	35.54	37.49	35.49	20.31	13.79	17.76	211.16
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	660	426	409	270	277	46	0	0	0	2088
3810	520	370	309	435	125	76	88	0	0	1923
3811	399	341	369	83	221	131	4	0	0	1548
3814	828	479	409	262	364	353	31	11	106	2843
3816	615	431	316	281	293	176	71	1	0	2184
3818	385	316	138	32	198	186	58	0	0	1313
3819	427	252	151	105	5	0	1	0	5	946
3820	350	381	352	241	82	13	0	0	0	1419
3822	162	30	15	0	0	0	4	1	19	231
3824	332	187	193	178	96	20	0	12	0	1018
3825	519	395	384	374	86	173	120	0	0	2051
3828	508	425	293	266	245	87	0	0	0	1824
3830	441	298	180	95	0	0	0	0	2	1016
3832	500	382	278	286	319	395	320	233	17	2730
3837	600	432	346	217	168	165	149	133	317	2527
MEAN	483.1	343.0	276.1	208.3	165.3	121.4	56.4	26.1	31.1	1710.7
S.D.	158.14	115.73	115.96	124.19	120.24	124.06	88.01	66.58	83.63	733.58
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	188	125	85	47	0	0	21	0	0	466
3846	197	147	97	50	34	4	0	0	0	529
3848	265	203	105	114	31	6	0	0	0	724
3849	175	129	139	104	0	0	0	0	0	547
3852	241	202	108	6	0	0	1	0	1	559
3855	289	184	143	113	24	0	0	0	0	753
3856	266	136	5	14	0	0	0	0	0	421
3863	184	213	176	6	0	0	0	0	0	579
3864	159	225	46	0	0	0	0	0	17	447
3867	139	109	104	46	0	0	0	0	0	398
3869	259	244	163	59	3	0	6	78	0	812
3871	164	143	17	0	3	3	1	0	0	331
3872	173	172	140	26	0	5	1	2	0	519
3875	158	144	117	28	0	0	0	0	0	447
3877	208	131	79	0	42	0	0	0	0	460
MEAN	204.3	167.1	101.6	40.9	9.1	1.2	2.0	5.3	1.2	532.8
S.D.	47.56	41.90	49.70	41.03	15.17	2.14	5.48	20.11	4.38	136.83
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	100	46	31	22	0	0	10	0	0	209
3846	66	39	62	8	9	0	0	0	0	184
3848	129	87	51	45	18	0	0	0	0	330
3849	110	43	34	26	0	0	0	0	0	213
3852	73	58	43	2	0	0	0	0	0	176
3855	100	66	11	18	0	0	0	1	0	196
3856	100	43	0	0	0	0	0	0	0	143
3863	107	49	34	0	0	0	0	0	0	190
3864	85	23	4	0	0	0	0	0	9	121
3867	104	52	17	23	0	0	0	0	0	196
3869	59	32	39	16	3	0	0	31	0	180
3871	133	45	3	0	0	0	0	0	0	181
3872	74	81	32	15	0	0	0	0	0	202
3875	76	50	12	8	0	0	0	0	0	146
3877	64	31	6	0	6	0	0	0	0	107
MEAN	92.0	49.7	25.3	12.2	2.4	.0	.7	2.1	.6	184.9
S.D.	23.11	17.58	19.18	13.14	5.10	.00	2.58	7.99	2.32	51.08
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	159	92	64	22	0	0	20	0	0	357
3846	111	87	90	21	23	0	0	0	0	332
3848	97	127	74	59	14	0	0	0	0	371
3849	145	100	94	56	0	0	0	0	0	395
3852	196	146	90	0	0	0	0	0	0	432
3855	161	116	107	53	8	0	0	0	0	445
3856	152	78	0	0	0	0	0	0	0	230
3863	150	162	97	0	0	0	0	0	0	409
3864	68	101	5	0	0	0	0	0	8	182
3867	120	97	50	43	0	0	0	0	0	310
3869	103	94	53	24	9	0	0	27	0	310
3871	112	74	5	0	0	0	0	0	0	191
3872	100	93	55	9	0	0	0	0	0	257
3875	83	77	28	9	0	0	0	0	0	197
3877	114	80	27	0	18	0	0	0	0	239
MEAN	124.7	101.6	55.9	19.7	4.8	.0	1.3	1.8	.5	310.5
S.D.	34.50	25.81	36.29	22.51	7.78	.00	5.16	6.97	2.07	90.28
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	447	263	180	91	0	0	51	0	0	1032
3846	374	273	249	79	66	4	0	0	0	1045
3848	491	417	230	218	63	6	0	0	0	1425
3849	430	272	267	186	0	0	0	0	0	1155
3852	510	406	241	8	0	0	1	0	1	1167
3855	550	366	261	184	32	0	0	1	0	1394
3856	518	257	5	14	0	0	0	0	0	794
3863	441	424	307	6	0	0	0	0	0	1178
3864	312	349	55	0	0	0	0	0	34	750
3867	363	258	171	112	0	0	0	0	0	904
3869	421	370	255	99	15	0	6	136	0	1302
3871	409	262	25	0	3	3	1	0	0	703
3872	347	346	227	50	0	5	1	2	0	978
3875	317	271	157	45	0	0	0	0	0	790
3877	386	242	112	0	66	0	0	0	0	806
MEAN	421.1	318.4	182.8	72.8	16.3	1.2	4.0	9.3	2.3	1028.2
S.D.	73.26	66.08	94.29	74.72	26.64	2.14	13.09	35.06	8.76	237.00
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	249	196	60	98	39	0	0	0	0	642
3843	292	180	93	78	45	5	5	0	0	698
3847	165	193	230	154	132	184	197	118	138	1511
3851	267	316	304	280	164	190	167	155	211	2054
3853	297	188	83	93	53	98	0	0	0	812
3854	226	159	123	39	0	0	0	1	6	554
3857	201	206	167	155	25	31	0	0	17	802
3860	307	195	202	169	10	11	0	0	0	894
3861	304	225	135	108	0	0	0	0	0	772
3862	291	192	57	112	53	0	0	54	82	841
3865	241	153	112	99	54	0	0	0	0	659
3866	401	302	211	230	54	64	0	13	0	1275
3870	387	286	207	133	122	52	13	1	0	1201
3873	264	288	256	90	7	0	0	0	0	905
3874	191	177	149	178	32	0	0	0	0	727
MEAN	272.2	217.1	159.3	134.4	52.7	42.3	25.5	22.8	30.3	956.5
S.D.	65.60	53.72	74.12	62.10	49.56	65.78	63.90	48.73	63.74	400.07
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	115	71	26	31	23	0	0	0	0	266
3843	146	101	46	11	0	0	0	0	0	304
3847	106	81	53	43	27	65	48	49	30	502
3851	322	164	67	91	33	87	43	60	63	930
3853	136	82	31	34	0	38	0	0	0	321
3854	118	58	17	4	0	0	0	0	0	197
3857	429	123	80	59	0	0	0	0	1	692
3860	139	54	41	71	7	0	0	0	0	312
3861	112	62	45	35	0	0	0	0	0	254
3862	101	118	8	62	17	0	0	10	34	350
3865	152	54	80	49	37	0	0	0	0	372
3866	143	95	77	93	30	30	0	1	0	469
3870	67	50	22	32	40	24	0	1	0	236
3873	127	63	19	6	0	0	0	0	0	215
3874	203	79	97	115	20	0	0	0	0	514
MEAN	161.1	83.7	47.3	49.1	15.6	16.3	6.1	8.1	8.5	395.6
S.D.	94.20	31.90	27.49	32.95	15.36	27.70	16.04	19.14	18.77	200.38
N	15	15	15	15	15	15	15	15	15	15

TABLE 3
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 7 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	81	80	14	30	13	0	0	0	0	218
3843	117	81	49	18	0	0	0	0	0	265
3847	94	100	97	118	115	134	194	72	63	987
3851	161	183	159	149	92	127	72	58	104	1105
3853	187	85	38	39	0	24	0	0	0	373
3854	97	79	37	6	0	0	0	0	5	224
3857	151	115	77	55	0	0	0	0	4	402
3860	236	148	171	115	3	0	0	0	0	673
3861	125	85	66	25	0	0	0	0	0	301
3862	119	87	11	35	26	0	0	20	23	321
3865	99	76	54	31	26	0	0	0	0	286
3866	194	159	95	121	21	20	0	2	0	612
3870	186	90	78	70	80	27	0	0	0	531
3873	190	214	126	40	0	0	0	0	0	570
3874	134	94	90	92	25	0	0	0	0	435
MEAN	144.7	111.7	77.5	62.9	26.7	22.1	17.7	10.1	13.3	486.9
S.D.	45.94	43.39	47.61	44.85	37.76	45.07	52.17	23.01	30.14	268.23
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	445	347	100	159	75	0	0	0	0	1126
3843	555	362	188	107	45	5	5	0	0	1267
3847	365	374	380	315	274	383	439	239	231	3000
3851	750	663	530	520	289	404	282	273	378	4089
3853	620	355	152	166	53	160	0	0	0	1506
3854	441	296	177	49	0	0	0	1	11	975
3857	781	444	324	269	25	31	0	0	22	1896
3860	682	397	414	355	20	11	0	0	0	1879
3861	541	372	246	168	0	0	0	0	0	1327
3862	511	397	76	209	96	0	0	84	139	1512
3865	492	283	246	179	117	0	0	0	0	1317
3866	738	556	383	444	105	114	0	16	0	2356
3870	640	426	307	235	242	103	13	2	0	1968
3873	581	565	401	136	7	0	0	0	0	1690
3874	528	350	336	385	77	0	0	0	0	1676
MEAN	578.0	412.5	284.0	246.4	95.0	80.7	49.3	41.0	52.1	1838.9
S.D.	122.75	105.48	129.02	132.83	97.53	136.92	129.84	90.14	111.97	805.45
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF3.IMA

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	153	120	153	57	19	0	0	0	0	502
3815	210	163	113	59	16	0	0	0	0	561
3817	248	155	90	87	3	0	0	6	0	589
3821	142	62	135	18	0	0	0	0	0	357
3823	218	127	87	98	12	0	0	0	0	542
3826	167	28	0	0	5	25	0	0	0	225
3827	175	85	25	0	0	0	0	0	0	285
3829	220	152	57	15	1	0	3	4	33	485
3833	195	145	1	0	0	0	0	0	0	341
3834	165	145	39	8	0	0	0	0	0	357
3838	199	157	80	35	0	65	41	0	1	578
3839	200	82	78	105	40	6	1	0	0	512
3840	208	113	53	0	0	0	0	0	0	374
3842	179	127	56	5	0	0	0	0	0	367
3844	280	90	6	0	0	0	0	0	15	391
MEAN	197.3	116.7	64.9	32.5	6.4	6.4	3.0	.7	3.3	431.1
S.D.	36.31	39.73	46.92	38.71	11.28	17.47	10.54	1.80	9.08	114.04
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	76	60	92	41	0	0	0	0	0	269
3815	44	37	53	11	1	0	0	0	0	146
3817	92	77	52	23	0	0	0	0	0	244
3821	52	53	27	0	0	0	0	0	0	132
3823	76	51	40	11	1	0	0	0	0	179
3826	59	8	0	0	0	4	0	0	0	71
3827	60	59	6	3	0	0	0	0	0	128
3829	110	71	10	0	0	0	0	0	12	203
3833	64	61	0	0	0	0	0	0	0	125
3834	51	41	7	0	0	0	0	0	0	99
3838	65	25	37	8	0	19	10	0	0	164
3839	88	28	11	16	20	0	0	0	0	163
3840	81	56	15	0	0	0	0	0	0	152
3842	63	54	9	0	0	0	0	0	0	126
3844	72	5	0	0	0	0	0	0	0	77
MEAN	70.2	45.7	23.9	7.5	1.5	1.5	.7	.0	.8	151.9
S.D.	17.52	21.40	26.32	11.74	5.14	4.94	2.58	.00	3.10	55.52
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	112	44	73	25	0	0	0	0	0	254
3815	117	66	59	33	4	0	0	0	0	279
3817	165	83	56	35	2	0	0	6	0	347
3821	88	38	51	0	0	0	0	0	0	177
3823	119	39	33	6	8	0	0	0	0	205
3826	64	7	0	0	0	12	0	0	0	83
3827	90	38	15	0	0	0	0	0	0	143
3829	176	77	33	4	0	2	0	0	13	305
3833	120	52	0	0	0	0	0	0	0	172
3834	85	52	24	0	0	0	0	0	0	161
3838	97	35	26	18	0	18	6	0	0	200
3839	91	48	22	26	11	0	0	0	0	198
3840	120	45	20	0	0	0	0	0	0	185
3842	87	67	20	0	0	0	0	0	0	174
3844	98	19	1	0	0	0	0	0	4	122
MEAN	108.6	47.3	28.9	9.8	1.7	2.1	.4	.4	1.1	200.3
S.D.	29.90	20.31	22.34	13.50	3.42	5.37	1.55	1.55	3.44	69.99
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	341	224	318	123	19	0	0	0	0	1025
3815	371	266	225	103	21	0	0	0	0	986
3817	505	315	198	145	5	0	0	12	0	1180
3821	282	153	213	18	0	0	0	0	0	666
3823	413	217	160	115	21	0	0	0	0	926
3826	290	43	0	0	5	41	0	0	0	379
3827	325	182	46	3	0	0	0	0	0	556
3829	506	300	100	19	1	2	3	4	58	993
3833	379	258	1	0	0	0	0	0	0	638
3834	301	238	70	8	0	0	0	0	0	617
3838	361	217	143	61	0	102	57	0	1	942
3839	379	158	111	147	71	6	1	0	0	873
3840	409	214	88	0	0	0	0	0	0	711
3842	329	248	85	5	0	0	0	0	0	667
3844	450	114	7	0	0	0	0	0	19	590
MEAN	376.1	209.8	117.7	49.8	9.5	10.1	4.1	1.1	5.2	783.3
S.D.	70.53	71.19	92.21	59.10	18.84	27.52	14.67	3.20	15.40	221.72
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	394	269	138	206	144	205	173	159	79	1767
3810	247	195	137	106	64	67	66	1	0	883
3811	242	177	137	65	11	2	0	0	0	634
3814	302	245	188	265	153	103	183	42	143	1624
3816	296	195	138	83	73	44	112	63	73	1077
3818	152	103	106	75	69	119	0	1	0	625
3819	200	95	74	60	53	3	0	0	8	493
3820	197	218	124	156	142	54	28	79	41	1039
3822	203	221	183	125	86	119	0	0	0	937
3824	141	123	135	74	31	100	67	16	0	687
3825	317	233	210	160	158	149	135	171	65	1598
3828	375	217	185	223	129	62	26	9	0	1226
3830	173	168	156	65	27	70	0	0	0	659
3832	350	328	210	190	153	223	115	70	52	1691
3837	242	133	80	69	165	68	112	133	110	1112
MEAN	255.4	194.7	146.7	128.1	97.2	92.5	67.8	49.6	38.1	1070.1
S.D.	80.31	64.00	42.23	67.51	54.14	63.90	66.18	61.25	47.10	428.75
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	139	92	98	41	38	30	12	70	9	529
3810	109	102	70	18	26	4	6	0	0	335
3811	91	27	75	31	3	0	0	0	0	227
3814	92	29	29	26	26	0	19	1	22	244
3816	102	46	35	58	2	1	72	17	10	343
3818	76	41	58	23	15	62	0	0	0	275
3819	80	32	45	1	20	0	0	0	2	180
3820	95	120	38	55	67	3	0	62	17	457
3822	65	63	56	65	20	38	0	0	0	307
3824	80	94	29	21	6	65	39	0	0	334
3825	129	106	58	36	58	59	42	46	21	555
3828	94	79	60	32	31	7	1	3	0	307
3830	80	58	50	18	5	17	0	0	0	228
3832	116	73	59	55	46	71	13	13	5	451
3837	166	54	9	23	38	2	44	71	97	504
MEAN	100.9	67.7	51.3	33.5	26.7	23.9	16.5	18.9	12.2	351.7
S.D.	27.06	30.16	21.72	18.04	19.91	27.66	22.39	28.07	24.79	119.34
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	209	168	84	137	79	90	35	54	24	880
3810	132	112	62	42	29	2	6	0	0	385
3811	123	70	59	37	7	0	0	0	0	296
3814	175	71	93	143	70	17	56	8	49	682
3816	139	104	54	47	19	4	64	32	45	508
3818	114	83	70	60	28	83	0	0	0	438
3819	81	62	39	5	33	0	0	0	5	225
3820	116	99	40	80	60	24	2	47	6	474
3822	96	128	85	32	29	44	0	0	0	414
3824	115	93	107	37	9	55	38	1	0	455
3825	147	[illegible]	79	93	107	79	63	78	44	786
3828	155	[illegible]	81	80	53	23	5	0	0	515
3830	97	98	59	25	0	27	0	0	0	306
3832	135	131	77	102	78	93	38	23	18	695
3837	108	33	18	16	39	2	28	31	42	317
MEAN	129.5	97.7	67.1	62.4	42.7	36.2	22.3	18.3	15.5	491.7
S.D.	32.89	32.52	23.26	42.18	30.87	35.18	24.90	25.05	19.76	191.26
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	742	529	320	384	261	325	220	283	112	3176
3810	488	409	269	166	119	73	78	1	0	1603
3811	456	274	271	133	21	2	0	0	0	1157
3814	569	345	310	434	249	120	258	51	214	2550
3816	537	345	227	188	94	49	248	112	128	1928
3818	342	227	234	158	112	264	0	1	0	1338
3819	361	189	158	66	106	3	0	0	15	898
3820	408	437	202	291	269	81	30	188	64	1970
3822	364	412	324	222	135	201	0	0	0	1658
3824	336	310	271	132	46	220	144	17	0	1476
3825	593	435	347	289	323	287	240	295	130	2939
3828	624	414	326	335	213	92	32	12	0	2048
3830	350	324	265	108	32	114	0	0	0	1193
3832	601	532	346	347	277	387	166	106	75	2837
3837	516	220	107	108	242	72	184	235	249	1933
MEAN	485.8	360.1	265.1	224.1	166.6	152.7	106.7	86.7	65.8	1913.6
S.D.	125.03	105.52	69.90	114.49	99.90	120.12	104.73	110.73	83.93	693.46
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	114	60	76	171	32	0	0	0	16	469
3846	163	143	125	38	0	0	12	0	0	481
3848	234	132	96	63	36	0	0	6	0	567
3849	156	92	98	20	0	0	124	74	21	585
3852	357	138	78	0	0	0	0	0	0	573
3855	322	195	181	69	12	2	0	0	2	783
3856	249	85	13	1	0	2	0	0	0	350
3863	266	85	45	5	17	0	0	5	0	423
3864	238	139	15	0	0	0	20	0	15	427
3867	152	73	52	2	0	0	0	20	3	302
3869	195	136	142	135	68	0	0	16	0	692
3871	174	175	176	24	0	0	0	0	0	549
3872	248	136	93	54	38	0	0	0	0	569
3875	209	197	94	79	59	28	2	0	0	668
3877	256	170	104	23	88	111	0	48	0	800
MEAN	222.2	130.4	92.5	45.6	23.3	9.5	10.5	11.3	3.8	549.2
S.D.	65.86	43.40	50.14	51.51	29.13	28.97	31.91	21.70	7.16	145.74
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	51	84	53	14	5	0	0	0	6	213
3846	65	32	51	0	0	0	0	0	0	148
3848	137	45	37	10	0	0	0	0	3	232
3849	88	38	36	28	0	0	80	43	10	323
3852	103	71	10	0	0	0	0	0	0	184
3855	146	32	27	30	0	0	0	0	0	235
3856	57	51	0	0	0	0	0	0	0	108
3863	100	27	23	4	15	0	0	0	0	169
3864	60	53	8	0	0	0	4	0	0	125
3867	101	27	17	0	0	0	0	31	11	187
3869	62	39	21	33	13	0	0	5	0	173
3871	127	44	17	0	0	0	0	0	0	188
3872	143	60	29	29	7	0	0	0	0	268
3875	132	87	39	45	15	4	0	0	0	322
3877	113	80	16	21	20	39	0	12	0	301
MEAN	99.0	51.3	25.6	14.3	5.0	2.9	5.6	6.1	2.0	211.7
S.D.	33.72	20.67	15.36	15.44	7.16	10.05	20.61	13.17	3.84	67.74
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	98	34	59	38	15	0	0	0	18	262
3846	87	48	57	0	0	0	12	0	0	204
3848	118	54	39	19	0	0	0	0	0	230
3849	140	65	72	20	0	0	100	62	15	474
3852	165	53	18	0	0	0	0	0	0	236
3855	196	103	105	44	0	0	0	0	0	448
3856	96	68	1	2	0	0	0	0	0	167
3863	173	62	19	8	12	0	0	6	0	280
3864	142	56	7	0	0	0	10	0	7	222
3867	84	48	28	6	0	0	0	19	6	191
3869	90	52	74	44	18	0	0	6	0	284
3871	118	112	62	6	0	0	0	0	0	298
3872	147	60	34	25	24	0	0	0	0	290
3875	109	71	34	36	16	0	0	0	0	266
3877	154	101	72	21	36	77	0	17	0	478
MEAN	127.8	65.8	45.4	17.9	8.1	5.1	8.1	7.3	3.1	288.7
S.D.	34.79	22.48	29.13	16.38	11.48	19.88	25.71	16.39	5.93	99.70
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	263	178	188	223	52	0	0	0	40	944
3846	315	223	233	38	0	0	24	0	0	833
3848	489	231	172	92	36	0	0	6	3	1029
3849	384	195	206	68	0	0	304	179	46	1382
3852	625	262	106	0	0	0	0	0	0	993
3855	664	330	313	143	12	2	0	0	2	1466
3856	402	204	14	3	0	2	0	0	0	625
3863	539	174	87	17	44	0	0	11	0	872
3864	440	248	30	0	0	0	34	0	22	774
3867	337	148	97	8	0	0	0	70	20	680
3869	347	227	237	212	99	0	0	27	0	1149
3871	419	331	255	30	0	0	0	0	0	1035
3872	538	256	156	108	69	0	0	0	0	1127
3875	450	355	167	160	90	32	2	0	0	1256
3877	523	351	192	65	144	227	0	77	0	1579
MEAN	449.0	247.5	163.5	77.8	36.4	17.5	24.3	24.7	8.9	1049.6
S.D.	114.40	66.76	83.69	76.35	45.98	58.52	78.07	49.73	15.66	281.44
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	292	222	82	7	0	99	67	81	4	854
3843	311	142	69	35	20	15	12	4	0	608
3847	292	197	194	53	26	195	36	14	0	1007
3851	324	249	204	170	154	125	108	59	63	1456
3853	312	134	61	103	52	24	0	0	1	687
3854	262	194	121	136	96	43	11	0	17	880
3857	229	184	147	100	31	118	220	192	37	1258
3860	342	232	178	220	140	32	183	8	0	1335
3861	277	171	77	22	4	0	1	0	0	552
3862	290	231	71	37	63	0	0	144	106	942
3865	291	210	147	110	8	0	0	94	9	869
3866	474	256	214	178	42	90	47	10	8	1319
3870	320	259	168	146	36	132	0	0	0	1061
3873	251	337	145	114	157	39	62	39	40	1184
3874	208	181	65	135	11	38	1	0	1	640
MEAN	298.3	213.3	129.5	104.4	56.0	63.3	49.9	43.0	19.1	976.8
S.D.	60.61	51.37	55.13	62.78	54.85	59.38	69.88	60.14	30.67	287.38
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	76	47	29	0	0	58	27	29	5	271
3843	122	58	18	2	0	0	0	1	0	201
3847	127	80	29	35	0	40	27	2	0	340
3851	121	57	151	63	20	66	31	2	8	519
3853	218	68	47	58	12	0	0	2	1	406
3854	119	92	63	35	57	1	0	0	0	367
3857	479	180	129	53	17	36	102	119	24	1139
3860	82	80	94	107	28	1	60	4	0	456
3861	117	57	22	0	0	0	1	0	0	197
3862	134	35	13	2	16	0	0	49	49	298
3865	143	48	60	38	0	0	0	32	0	321
3866	149	62	102	61	20	47	0	0	0	441
3870	63	29	27	41	2	25	0	0	0	187
3873	80	69	31	25	99	12	10	0	12	338
3874	147	68	71	44	5	29	0	0	1	365
MEAN	145.1	68.7	59.1	37.6	18.4	21.0	17.2	16.0	6.7	389.7
S.D.	99.86	35.08	42.69	29.58	27.09	23.64	29.38	32.31	13.48	228.78
N	15	15	15	15	15	15	15	15	15	15

TABLE 4
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 1 DAY POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	99	74	23	0	0	46	13	17	0	272
3843	132	70	29	6	0	0	0	0	0	237
3847	160	107	121	37	6	131	27	6	0	595
3851	144	117	103	71	65	54	49	17	10	630
3853	175	58	38	30	11	0	0	0	0	312
3854	126	81	66	42	50	16	0	0	10	391
3857	155	71	102	27	6	52	125	73	11	622
3860	218	153	136	134	61	7	120	0	0	829
3861	121	69	29	0	0	0	0	0	0	219
3862	141	62	24	8	15	0	0	54	47	351
3865	162	106	92	61	0	0	0	34	0	455
3866	290	89	104	79	19	42	0	0	0	623
3870	172	143	86	49	6	56	0	0	0	512
3873	150	210	121	79	152	40	46	19	19	836
3874	180	105	57	57	0	9	0	0	0	408
MEAN	161.7	101.0	75.4	45.3	26.1	30.2	25.3	14.7	6.5	486.1
S.D.	45.45	41.58	39.66	36.73	41.55	35.96	42.94	22.60	12.72	198.99
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	467	343	134	7	0	203	107	127	9	1397
3843	565	270	116	43	20	15	12	5	0	1046
3847	579	384	344	125	32	366	90	22	0	1942
3851	589	423	458	304	239	245	188	78	81	2605
3853	705	260	146	191	75	24	0	2	2	1405
3854	507	367	250	213	203	60	11	0	27	1638
3857	863	435	378	180	54	206	447	384	72	3019
3860	642	465	408	461	229	40	363	12	0	2620
3861	515	297	128	22	4	0	2	0	0	968
3862	565	328	108	47	94	0	0	247	202	1591
3865	596	364	299	209	8	0	0	160	9	1645
3866	913	407	420	318	81	179	47	10	8	2383
3870	555	431	281	236	44	213	0	0	0	1760
3873	481	616	297	218	408	91	118	58	71	2358
3874	535	354	193	236	16	76	1	0	2	1413
MEAN	605.1	382.9	264.0	187.3	100.5	114.5	92.4	73.7	32.2	1852.7
S.D.	129.98	88.47	121.16	124.42	117.55	112.86	140.10	113.07	55.42	613.00
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF4.IMA

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 2 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	205	77	43	18	0	42	15	0	0	400
3846	142	27	78	61	0	15	0	0	0	323
3848	200	128	165	83	119	85	2	0	25	807
3849	165	36	43	132	1	0	0	0	15	392
3852	268	200	120	2	0	0	16	0	0	606
3855	269	164	193	153	146	37	26	0	0	988
3856	241	155	52	18	2	1	0	0	2	471
3863	184	172	91	55	0	0	1	1	19	523
3864	171	33	0	0	40	0	0	0	0	244
3867	171	111	78	42	27	85	25	24	2	565
3869	241	122	109	80	75	100	10	0	0	737
3871	182	97	9	0	7	0	3	1	1	300
3872	194	122	75	4	0	0	0	0	0	395
3875	179	161	131	90	20	2	0	0	2	585
3877	277	165	155	25	0	1	1	1	0	625
MEAN	205.9	118.0	89.5	50.9	29.1	24.5	6.6	1.8	4.4	530.7
S.D.	42.68	54.59	56.34	48.71	47.17	36.63	9.42	6.16	8.17	204.18
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	78	25	24	9	0	15	0	0	0	151
3846	72	23	12	30	0	1	0	0	0	138
3848	120	52	124	52	30	3	0	0	6	387
3849	108	25	19	79	0	0	0	0	0	231
3852	82	71	23	0	0	0	0	0	0	176
3855	59	58	54	20	48	3	0	0	0	242
3856	91	32	1	0	0	0	0	0	0	124
3863	102	88	8	0	0	0	0	0	0	198
3864	53	13	0	0	7	0	0	0	0	73
3867	81	21	44	88	16	40	11	0	0	301
3869	91	42	26	29	8	5	0	0	0	201
3871	104	27	2	0	0	0	0	0	0	133
3872	122	57	0	0	0	0	0	0	0	179
3875	89	75	95	59	3	3	0	0	2	326
3877	133	41	10	1	0	0	0	0	0	185
MEAN	92.3	43.3	29.5	24.5	7.5	4.7	.7	.0	.5	203.0
S.D.	22.84	22.59	36.53	30.95	14.00	10.53	2.84	.00	1.60	83.46
N	15	15	15	15	15	15	15	15	15	15

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 2 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	109	13	22	12	0	29	0	0	0	185
3846	82	20	26	39	0	7	0	0	0	174
3848	99	46	104	46	50	0	0	0	11	356
3849	101	50	27	83	5	0	0	0	5	271
3852	148	115	39	0	0	0	5	0	0	307
3855	142	61	113	17	65	0	0	0	0	398
3856	117	83	7	0	0	0	0	0	0	207
3863	91	62	8	0	0	0	0	0	6	167
3864	92	14	0	0	15	0	0	0	0	121
3867	116	71	37	28	10	39	20	6	0	327
3869	95	62	31	24	22	17	0	0	0	251
3871	108	31	0	0	0	0	0	0	0	139
3872	93	43	0	0	0	0	0	0	0	136
3875	90	85	54	25	14	0	0	0	0	268
3877	100	58	53	2	0	0	0	0	0	213
MEAN	105.5	54.3	34.7	18.4	12.1	6.1	1.7	.4	1.5	234.7
S.D.	18.79	28.25	34.92	23.71	19.95	12.35	5.23	1.55	3.27	85.20
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	392	115	89	39	0	86	15	0	0	736
3846	296	70	116	130	0	23	0	0	0	635
3848	419	226	393	181	199	88	2	0	42	1550
3849	374	111	89	294	6	0	0	0	20	894
3852	498	386	182	2	0	0	21	0	0	1089
3855	470	283	360	190	259	40	26	0	0	1628
3856	449	270	60	18	2	1	0	0	2	802
3863	377	322	107	55	0	0	1	1	25	888
3864	316	60	0	0	62	0	0	0	0	438
3867	368	203	159	158	53	164	56	30	2	1193
3869	427	226	166	133	105	122	10	0	0	1189
3871	394	155	11	0	7	0	3	1	1	572
3872	409	222	75	4	0	0	0	0	0	710
3875	358	321	280	174	37	5	0	0	4	1179
3877	510	264	218	28	0	1	1	1	0	1023
MEAN	403.8	215.6	153.7	93.7	48.7	35.3	9.0	2.2	6.4	968.4
S.D.	60.90	97.05	117.05	92.20	80.31	53.69	15.53	7.70	12.53	342.72
N	15	15	15	15	15	15	15	15	15	15

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 2 DAYS POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	136	99	1	0	1	0	1	1	10	249
3843	120	38	26	54	37	0	78	12	16	381
3847	240	161	126	50	0	0	0	0	28	605
3851	311	200	194	124	78	3	4	11	32	957
3853	128	28	47	63	89	116	22	44	90	627
3854	198	104	112	38	0	0	0	0	0	452
3857	216	95	142	28	44	20	0	0	21	566
3860	284	266	194	165	137	151	92	41	0	1330
3861	193	96	0	0	0	0	0	10	0	299
3862	221	143	162	56	22	4	0	0	20	628
3865	261	107	66	0	5	0	0	2	40	481
3866	334	162	101	141	63	129	46	53	108	1137
3870	342	111	69	0	0	3	17	1	0	543
3873	194	110	157	95	151	3	0	0	0	710
3874	206	127	8	0	0	0	0	0	1	342
MEAN	225.6	123.1	93.7	54.3	41.8	28.6	17.3	11.7	24.4	620.5
S.D.	70.45	59.18	68.36	54.83	51.51	54.16	30.41	18.43	33.21	307.63
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	36	46	3	0	0	0	0	0	4	89
3843	36	6	6	5	31	0	21	2	2	109
3847	89	69	63	4	0	0	0	0	19	244
3851	124	34	19	40	4	0	0	0	0	221
3853	70	47	8	23	43	59	12	15	56	333
3854	147	90	66	1	0	0	0	0	0	304
3857	125	45	35	3	7	0	0	0	2	217
3860	221	103	216	119	134	142	47	12	0	994
3861	85	31	0	0	0	0	0	0	0	116
3862	75	36	166	18	2	0	0	0	2	299
3865	146	63	19	0	3	2	0	0	17	250
3866	128	45	14	64	15	41	11	7	24	349
3870	62	24	17	0	0	0	0	0	0	103
3873	106	57	66	24	66	0	0	0	0	319
3874	160	84	2	0	0	0	0	0	0	246
MEAN	107.3	52.0	46.7	20.1	20.3	16.3	6.1	2.4	8.4	279.5
S.D.	50.20	26.16	63.68	33.06	37.06	39.06	12.99	4.90	15.43	216.23
N	15	15	15	15	15	15	15	15	15	15

TABLE 5
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 9 - 2 DAYS POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	41	26	0	0	0	0	0	0	0	67
3843	27	11	9	11	13	0	24	0	0	95
3847	203	160	107	30	0	0	0	0	30	530
3851	134	88	84	41	27	0	0	2	12	388
3853	35	3	8	13	11	38	2	4	50	164
3854	85	47	54	4	0	0	0	0	0	190
3857	96	22	32	10	15	1	0	0	6	182
3860	161	128	87	82	83	113	48	8	0	710
3861	83	44	0	0	0	0	0	5	0	132
3862	110	78	68	33	3	0	0	0	8	300
3865	126	45	20	0	0	0	0	0	20	211
3866	160	82	27	53	25	60	5	17	28	457
3870	132	32	36	0	0	0	0	0	0	200
3873	129	68	101	63	77	0	0	0	0	438
3874	96	44	2	0	0	0	0	0	3	145
MEAN	107.9	58.5	42.3	22.7	16.9	14.1	5.3	2.4	10.5	280.6
S.D.	49.55	43.25	38.30	26.55	27.25	32.53	13.34	4.72	15.10	184.74
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	213	171	4	0	1	0	1	1	14	405
3843	183	55	41	70	81	0	123	14	18	585
3847	532	390	296	84	0	0	0	0	77	1379
3851	569	322	297	205	109	3	4	13	44	1566
3853	233	78	63	99	143	213	36	63	196	1124
3854	430	241	232	43	0	0	0	0	0	946
3857	437	162	209	41	66	21	0	0	29	965
3860	666	497	497	366	354	406	187	61	0	3034
3861	361	171	0	0	0	0	0	15	0	547
3862	406	257	396	107	27	4	0	0	30	1227
3865	533	215	105	0	8	2	0	2	77	942
3866	622	289	142	258	103	230	62	77	160	1943
3870	536	167	122	0	0	3	17	1	0	846
3873	429	235	324	182	294	3	0	0	0	1467
3874	462	255	12	0	0	0	0	0	4	733
MEAN	440.8	233.7	182.7	97.0	79.1	59.0	28.7	16.5	43.3	1180.6
S.D.	145.33	113.28	154.34	110.61	111.04	122.88	55.56	26.92	60.95	661.17
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF5.IMA

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 4 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	164	88	32	2	0	0	0	0	0	286
3846	109	81	20	0	0	4	0	0	0	214
3848	171	84	88	17	0	0	0	0	0	360
3849	201	123	78	171	36	0	0	0	0	609
3852	252	115	19	0	5	0	0	1	0	392
3855	258	166	11	188	29	0	0	0	0	652
3856	252	70	31	2	0	1	0	0	0	356
3863	306	137	57	0	0	0	0	27	0	527
3864	198	126	0	0	0	0	0	0	0	324
3867	182	95	32	87	12	0	0	0	0	408
3869	222	98	10	0	0	2	0	0	1	333
3871	225	65	3	0	0	0	0	0	0	293
3872	236	114	36	0	0	0	0	0	0	386
3875	181	72	63	12	0	0	0	0	2	330
3877	247	69	0	0	0	0	0	0	0	316
MEAN	213.6	100.2	32.0	31.9	5.5	.5	.0	1.9	.2	385.7
S.D.	48.52	29.29	28.01	63.97	11.52	1.13	.00	6.96	.56	121.12
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	65	40	5	0	0	0	0	0	0	110
3846	69	29	3	0	0	1	0	0	0	102
3848	87	32	50	2	0	0	0	0	0	171
3849	93	85	17	60	18	0	0	0	0	273
3852	72	35	4	0	0	0	0	0	0	111
3855	84	54	4	54	13	0	0	0	0	209
3856	110	27	1	0	0	0	0	0	0	138
3863	117	35	9	0	0	0	0	0	0	161
3864	55	47	0	0	0	0	0	0	0	102
3867	65	30	11	0	0	0	0	0	0	106
3869	68	31	0	0	0	0	0	0	0	99
3871	143	49	0	0	0	0	0	0	0	192
3872	78	66	0	0	0	0	0	0	0	144
3875	88	37	20	7	0	0	0	0	1	153
3877	90	12	0	0	0	0	0	0	0	102
MEAN	85.6	40.6	8.3	8.2	2.1	.1	.0	.0	.1	144.9
S.D.	23.26	17.73	13.18	19.93	5.54	.26	.00	.00	.26	50.21
N	15	15	15	15	15	15	15	15	15	15

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 4 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	114	35	14	0	0	0	0	0	0	163
3846	79	21	0	0	0	6	0	0	0	106
3848	66	28	64	2	0	0	0	0	0	160
3849	113	82	54	190	34	0	0	0	0	473
3852	137	56	1	0	0	0	0	0	0	194
3855	155	48	0	155	11	0	0	0	0	369
3856	141	29	25	0	0	0	0	0	0	195
3863	235	69	22	0	0	0	0	0	0	326
3864	112	47	0	0	0	0	0	0	0	159
3867	72	45	10	0	0	0	0	0	0	127
3869	85	27	1	0	0	0	0	0	0	113
3871	171	27	0	0	0	0	0	0	0	198
3872	128	59	0	0	0	0	0	0	0	187
3875	81	30	7	15	0	0	0	0	0	133
3877	125	20	0	0	0	0	0	0	0	145
MEAN	120.9	41.5	13.2	24.1	3.0	.4	.0	.0	.0	203.2
S.D.	44.44	18.54	20.45	60.72	9.03	1.55	.00	.00	.00	104.52
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	343	163	51	2	0	0	0	0	0	559
3846	257	131	23	0	0	11	0	0	0	422
3848	324	144	202	21	0	0	0	0	0	691
3849	407	290	149	421	88	0	0	0	0	1355
3852	461	206	24	0	5	0	0	1	0	697
3855	497	268	15	397	53	0	0	0	0	1230
3856	503	126	57	2	0	1	0	0	0	689
3863	658	241	88	0	0	0	0	27	0	1014
3864	365	220	0	0	0	0	0	0	0	585
3867	319	170	53	87	12	0	0	0	0	641
3869	375	156	11	0	0	2	0	0	1	545
3871	539	141	3	0	0	0	0	0	0	683
3872	442	239	36	0	0	0	0	0	0	717
3875	350	139	90	34	0	0	0	0	3	616
3877	462	101	0	0	0	0	0	0	0	563
MEAN	420.1	182.3	53.5	64.3	10.5	.9	.0	1.9	.3	733.8
S.D.	103.37	57.48	58.18	141.94	25.44	2.84	.00	6.96	.80	261.30
N	15	15	15	15	15	15	15	15	15	15

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 4 DAYS POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	228	123	12	0	0	0	0	0	0	363
3843	159	50	5	0	0	0	0	0	0	214
3847	296	87	53	0	0	0	0	0	0	436
3851	318	109	32	0	0	0	0	2	0	461
3853	169	57	40	0	0	3	0	1	6	276
3854	215	171	117	18	0	0	1	0	0	522
3857	338	90	36	0	3	0	0	0	0	467
3860	277	186	158	65	126	66	1	2	0	881
3861	278	65	0	0	0	0	0	1	0	344
3862	245	78	0	0	0	0	11	4	12	350
3865	238	48	0	0	0	0	12	0	1	299
3866	387	269	238	113	40	60	14	25	72	1218
3870	242	159	51	34	20	0	0	0	0	506
3873	270	73	0	2	8	9	0	2	0	364
3874	181	151	87	0	0	0	1	0	0	420
MEAN	256.1	114.4	55.3	15.5	13.1	9.2	2.7	2.5	6.1	474.7
S.D.	63.34	62.30	68.95	32.61	33.13	22.00	5.05	6.35	18.54	256.52
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	71	45	1	0	0	0	0	0	0	117
3843	71	71	0	0	0	0	0	0	1	143
3847	123	14	1	2	0	0	0	0	0	140
3851	81	34	7	0	0	0	0	0	0	122
3853	77	48	16	0	0	0	0	0	0	141
3854	55	114	55	16	0	0	0	0	0	240
3857	113	13	8	0	0	0	0	0	0	134
3860	212	167	191	115	105	130	0	0	0	920
3861	167	7	0	0	0	0	0	0	0	174
3862	120	35	0	0	0	0	0	0	0	155
3865	116	26	0	0	0	0	0	0	0	142
3866	160	92	49	11	4	13	0	0	13	342
3870	45	69	0	2	8	0	0	0	0	124
3873	67	36	0	0	0	2	0	0	0	105
3874	112	34	5	0	0	0	0	0	0	151
MEAN	106.0	53.7	22.2	9.7	7.8	9.7	.0	.0	.9	210.0
S.D.	46.52	43.26	49.94	29.51	26.98	33.46	.00	.00	3.35	205.22
N	15	15	15	15	15	15	15	15	15	15

TABLE 6
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 4 DAYS POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	79	48	2	0	0	0	0	0	0	129
3843	77	22	0	0	0	0	0	0	0	99
3847	174	55	0	0	0	0	0	0	0	229
3851	152	64	9	0	0	0	0	0	0	225
3853	49	14	4	0	0	0	0	0	0	67
3854	114	48	49	22	0	0	0	0	0	233
3857	115	20	2	0	0	0	0	0	0	137
3860	183	81	65	20	48	20	0	0	0	417
3861	162	32	0	0	0	0	0	0	0	194
3862	144	43	0	0	0	0	0	0	0	187
3865	144	24	0	0	0	0	0	0	0	168
3866	248	146	92	50	5	4	0	3	17	565
3870	148	91	0	6	9	0	0	0	0	254
3873	161	40	0	0	4	8	0	0	0	213
3874	94	62	9	0	0	0	0	0	0	165
MEAN	136.3	52.7	15.5	6.5	4.4	2.1	.0	.2	1.1	218.8
S.D.	50.01	34.07	28.89	14.09	12.35	5.42	.00	.77	4.39	125.36
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	378	216	15	0	0	0	0	0	0	609
3843	307	143	5	0	0	0	0	0	1	456
3847	593	156	54	2	0	0	0	0	0	805
3851	551	207	48	0	0	0	0	2	0	808
3853	295	119	60	0	0	3	0	1	6	484
3854	384	333	221	56	0	0	1	0	0	995
3857	566	123	46	0	3	0	0	0	0	738
3860	672	434	414	200	279	216	1	2	0	2218
3861	607	104	0	0	0	0	0	1	0	712
3862	509	156	0	0	0	0	11	4	12	692
3865	498	98	0	0	0	0	12	0	1	609
3866	795	507	379	174	49	77	14	28	102	2125
3870	435	319	51	42	37	0	0	0	0	884
3873	498	149	0	2	12	19	0	2	0	682
3874	387	247	101	0	0	0	1	0	0	736
MEAN	498.3	220.7	92.9	31.7	25.3	21.0	2.7	2.7	8.1	903.5
S.D.	138.44	125.00	135.84	65.51	71.78	57.53	5.05	7.11	26.18	533.40
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF6.IMA

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 7 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3845	141	66	2	0	0	0	0	0	0	209
3846	192	59	1	0	0	0	0	0	0	252
3848	153	157	132	105	84	7	0	0	0	638
3849	192	103	129	13	0	0	0	0	0	437
3852	267	105	113	1	0	0	0	0	10	496
3855	285	77	81	3	0	0	0	0	0	446
3856	251	138	12	0	0	0	0	0	0	401
3863	257	102	1	0	0	0	0	0	0	360
3864	193	139	69	17	1	0	0	0	1	420
3867	177	103	106	0	0	0	0	0	0	386
3869	187	114	46	0	0	0	0	0	0	347
3871	181	167	184	69	1	0	0	0	0	602
3872	198	188	43	0	0	0	1	0	0	430
3875	25	1	0	0	0	1	14	1	0	42
3877	188	85	52	24	0	3	0	0	0	352
MEAN	192.5	106.9	64.7	15.5	5.7	.7	1.0	.1	.7	387.9
S.D.	62.34	47.33	58.07	30.75	21.65	1.91	3.61	.26	2.58	147.04
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3845	39	14	0	0	0	0	0	0	0	53
3846	61	12	0	0	0	0	0	0	0	73
3848	86	41	32	41	28	0	0	0	0	228
3849	78	21	22	12	0	0	0	0	0	133
3852	48	23	46	0	0	0	0	0	0	117
3855	66	30	9	0	0	0	0	0	0	105
3856	58	17	7	0	0	0	0	0	0	82
3863	50	11	0	0	0	0	0	0	0	61
3864	53	18	15	0	0	0	0	0	0	86
3867	89	53	15	0	0	0	0	0	0	157
3869	75	69	0	0	0	0	0	0	0	144
3871	80	47	10	13	0	0	0	0	0	150
3872	131	96	9	0	0	0	0	0	0	236
3875	8	0	0	0	0	0	8	0	0	16
3877	45	25	6	0	0	0	0	0	0	76
MEAN	64.5	31.8	11.4	4.4	1.9	.0	.5	.0	.0	114.5
S.D.	27.92	25.46	13.29	11.03	7.23	.00	2.07	.00	.00	61.78
N	15	15	15	15	15	15	15	15	15	15

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 7 DAYS POSTEXPOSURE

BLOCK 2 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3845	67	4	0	0	0	0	0	0	0	71
3846	99	9	0	0	0	0	0	0	0	108
3848	88	74	51	73	31	0	0	0	0	317
3849	119	69	78	18	0	0	0	0	0	284
3852	119	24	49	0	0	0	0	0	7	199
3855	138	12	14	0	0	0	0	0	0	164
3856	120	63	5	0	0	0	0	0	0	188
3863	115	64	0	0	0	0	0	0	0	179
3864	96	70	23	0	0	0	0	0	0	189
3867	100	59	45	0	0	0	0	0	0	204
3869	96	49	8	0	0	0	0	0	0	153
3871	111	79	22	8	0	0	0	0	0	220
3872	95	72	10	0	0	0	0	0	0	177
3875	13	0	0	0	0	0	8	0	0	21
3877	91	58	14	0	0	4	0	0	0	167
MEAN	97.8	47.1	21.3	6.6	2.1	.3	.5	.0	.5	176.1
S.D.	29.01	28.61	23.79	19.02	8.00	1.03	2.07	.00	1.81	73.46
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3845	247	84	2	0	0	0	0	0	0	333
3846	352	80	1	0	0	0	0	0	0	433
3848	327	272	215	219	143	7	0	0	0	1183
3849	389	193	229	43	0	0	0	0	0	854
3852	434	152	208	1	0	0	0	0	17	812
3855	489	119	104	3	0	0	0	0	0	715
3856	429	218	24	0	0	0	0	0	0	671
3863	422	177	1	0	0	0	0	0	0	600
3864	342	227	107	17	1	0	0	0	1	695
3867	366	215	166	0	0	0	0	0	0	747
3869	358	232	54	0	0	0	0	0	0	644
3871	372	293	216	90	1	0	0	0	0	972
3872	424	356	62	0	0	0	1	0	0	843
3875	46	1	0	0	0	1	30	1	0	79
3877	324	168	72	24	0	7	0	0	0	595
MEAN	354.7	185.8	97.4	26.5	9.7	1.0	2.1	.1	1.2	678.4
S.D.	103.36	90.78	88.09	58.72	36.89	2.45	7.73	.26	4.38	264.04
N	15	15	15	15	15	15	15	15	15	15

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 7 DAYS POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3841	236	101	11	0	0	0	4	0	0	352
3843	234	154	54	0	0	0	1	0	0	443
3847	183	109	14	9	0	0	1	0	0	316
3851	322	144	157	1	0	0	0	0	1	625
3853	191	100	16	0	0	0	0	0	0	307
3854	174	127	16	0	0	1	0	0	0	318
3857	208	111	7	0	0	11	0	0	0	337
3860	350	174	146	11	0	0	1	0	0	682
3861	212	0	0	0	0	0	0	0	0	212
3862	282	122	13	0	0	4	0	7	12	440
3865	255	98	66	3	0	5	0	1	0	428
3866	320	237	102	85	16	0	0	0	0	760
3870	230	17	0	0	0	2	0	0	0	249
3873	234	63	10	0	0	0	0	2	0	309
3874	184	95	19	0	0	0	0	0	0	298
MEAN	241.0	110.1	42.1	7.3	1.1	1.5	.5	.7	.9	405.1
S.D.	54.99	58.10	52.51	21.79	4.13	3.07	1.06	1.84	3.09	162.38
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3841	72	69	9	0	0	0	0	0	0	150
3843	169	180	20	0	0	0	0	0	0	369
3847	56	33	0	0	0	0	0	0	0	89
3851	63	12	3	0	0	0	0	0	0	78
3853	53	98	0	0	0	0	0	0	0	151
3854	46	19	0	0	0	0	0	0	0	65
3857	43	21	0	0	0	0	0	0	0	64
3860	158	106	37	0	0	0	0	0	0	301
3861	104	0	0	0	0	0	0	0	0	104
3862	43	40	0	0	0	0	0	0	0	83
3865	144	53	16	0	0	0	0	0	0	213
3866	105	114	42	7	1	0	0	0	0	269
3870	72	8	0	0	0	0	0	0	0	80
3873	54	6	5	0	0	0	0	0	0	65
3874	174	45	2	0	0	0	0	0	0	221
MEAN	90.4	53.6	8.9	.5	.1	.0	.0	.0	.0	153.5
S.D.	48.41	51.04	13.92	1.81	.26	.00	.00	.00	.00	98.56
N	15	15	15	15	15	15	15	15	15	15

TABLE 7
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 10 - 7 DAYS POSTEXPOSURE

BLOCK 2 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3841	117	47	6	0	0	0	0	0	0	170
3843	121	55	16	0	0	0	0	0	0	192
3847	106	51	2	0	0	0	0	0	0	159
3851	128	60	0	0	0	0	0	0	0	188
3853	79	49	0	0	0	0	0	0	0	128
3854	56	31	0	0	0	0	0	0	0	87
3857	59	24	0	0	0	9	0	0	0	92
3860	239	91	106	0	0	0	0	0	0	436
3861	130	0	0	0	0	0	0	0	0	130
3862	118	66	2	0	0	0	0	0	0	186
3865	127	32	10	0	0	0	0	0	0	169
3866	140	101	49	11	2	0	0	0	0	303
3870	125	10	0	0	0	0	0	0	0	135
3873	102	0	4	0	0	0	0	0	0	106
3874	129	30	0	0	0	0	0	0	0	159
MEAN	118.4	43.1	13.0	.7	.1	.6	.0	.0	.0	176.0
S.D.	42.15	29.67	28.68	2.84	.52	2.32	.00	.00	.00	88.99
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3841	425	217	26	0	0	0	4	0	0	672
3843	524	389	90	0	0	0	1	0	0	1004
3847	345	193	16	9	0	0	1	0	0	564
3851	513	216	160	1	0	0	0	0	1	891
3853	323	247	16	0	0	0	0	0	0	586
3854	276	177	16	0	0	1	0	0	0	470
3857	310	156	7	0	0	20	0	0	0	493
3860	747	371	289	11	0	0	1	0	0	1419
3861	446	0	0	0	0	0	0	0	0	446
3862	443	228	15	0	0	4	0	7	12	709
3865	526	183	92	3	0	5	0	1	0	810
3866	565	452	193	103	19	0	0	0	0	1332
3870	427	35	0	0	0	2	0	0	0	464
3873	390	69	19	0	0	0	0	2	0	480
3874	487	170	21	0	0	0	0	0	0	678
MEAN	449.8	206.9	64.0	8.5	1.3	2.1	.5	.7	.9	734.5
S.D.	119.48	125.18	86.19	26.38	4.91	5.19	1.06	1.84	3.09	309.00
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF7.IMA

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 11 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	179	17	55	68	67	0	1	0	10	397
3815	193	101	115	44	0	2	114	3	4	576
3817	188	116	53	112	2	0	0	39	11	521
3821	91	136	53	0	1	0	0	0	0	281
3823	201	128	111	84	108	64	28	38	27	789
3826	153	55	0	0	0	0	0	0	0	208
3827	98	56	0	4	0	0	3	0	0	161
3829	184	118	55	132	113	81	47	1	0	731
3833	169	35	1	2	6	0	0	0	0	213
3834	191	108	125	72	75	139	24	7	16	757
3838	192	185	54	26	0	0	1	0	0	458
3839	238	105	127	34	0	0	0	0	0	504
3840	187	90	86	83	68	12	6	16	6	554
3842	163	42	9	0	70	6	0	0	0	290
3844	211	163	92	52	0	0	0	0	0	518
MEAN	175.9	97.0	62.4	47.5	34.0	20.3	14.9	6.9	4.9	463.9
S.D.	38.60	48.07	45.84	43.36	43.73	41.40	30.78	13.52	7.99	203.51
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	63	11	79	45	0	0	0	0	6	204
3815	61	30	30	14	0	0	29	0	0	164
3817	93	42	28	8	0	0	0	33	2	206
3821	41	27	0	0	0	0	0	0	0	68
3823	76	50	42	25	85	62	8	0	9	357
3826	40	9	3	0	0	0	0	0	0	52
3827	41	16	0	0	0	0	0	0	0	57
3829	50	34	31	12	9	7	0	0	0	143
3833	76	32	0	0	0	0	0	0	0	108
3834	53	30	46	17	29	66	0	0	0	241
3838	70	37	33	0	0	0	0	0	0	140
3839	61	26	9	10	0	0	0	0	0	106
3840	117	30	44	35	35	5	0	0	0	266
3842	56	5	0	0	0	0	0	0	0	61
3844	95	24	13	35	0	0	0	0	0	167
MEAN	66.2	26.9	23.9	13.4	10.5	9.3	2.5	2.2	1.1	156.0
S.D.	22.19	12.39	23.15	15.12	23.46	22.31	7.62	8.52	2.70	87.56
N	15	15	15	15	15	15	15	15	15	15

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 11 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	61	10	17	16	0	0	0	0	2	106
3815	101	49	68	31	0	3	25	0	0	277
3817	116	39	32	21	0	0	0	27	5	240
3821	39	34	0	0	0	0	0	0	0	73
3823	84	41	44	37	17	39	2	6	12	282
3826	59	26	0	0	0	0	0	0	0	85
3827	41	8	0	6	0	0	0	0	0	55
3829	95	40	30	68	59	3	0	0	0	295
3833	116	10	0	0	0	0	0	0	0	126
3834	66	60	58	27	33	61	0	0	0	305
3838	78	27	22	0	0	0	0	0	0	127
3839	99	63	17	16	0	0	0	0	0	195
3840	144	64	58	68	50	9	0	0	0	393
3842	78	10	0	0	0	0	0	0	0	88
3844	89	66	27	16	0	0	0	0	0	198
MEAN	84.4	36.5	24.9	20.4	10.6	7.7	1.8	2.2	1.3	189.7
S.D.	28.95	21.05	23.49	22.85	20.13	17.85	6.44	7.03	3.26	104.38
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	303	38	151	129	67	0	1	0	18	707
3815	355	180	213	89	0	5	168	3	4	1017
3817	397	197	113	141	2	0	0	99	18	967
3821	171	197	53	0	1	0	0	0	0	422
3823	361	219	197	146	210	165	38	44	48	1428
3826	252	90	3	0	0	0	0	0	0	345
3827	180	80	0	10	0	0	3	0	0	273
3829	329	192	116	212	181	91	47	1	0	1169
3833	361	77	1	2	6	0	0	0	0	447
3834	310	198	229	116	137	266	24	7	16	1303
3838	340	249	109	26	0	0	1	0	0	725
3839	398	194	153	60	0	0	0	0	0	805
3840	448	184	188	186	153	26	6	16	6	1213
3842	297	57	9	0	70	6	0	0	0	439
3844	395	253	132	103	0	0	0	0	0	883
MEAN	326.5	160.3	111.1	81.3	55.1	37.3	19.2	11.3	7.3	809.5
S.D.	78.29	71.25	80.77	72.96	76.94	78.45	43.89	26.89	13.24	371.43
N	15	15	15	15	15	15	15	15	15	15

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 11 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	395	164	221	180	196	160	146	129	174	1765
3810	201	168	102	42	59	6	0	7	5	590
3811	213	113	85	0	0	2	0	0	6	419
3814	264	324	140	60	59	106	108	0	15	1076
3816	319	251	175	170	118	123	186	22	29	1393
3818	162	134	95	44	22	0	0	0	0	457
3819	120	23	15	0	0	21	0	0	0	179
3820	209	122	160	114	56	8	32	32	0	733
3822	271	168	164	101	5	0	0	0	0	709
3824	166	161	172	85	137	9	2	0	0	732
3825	332	129	135	172	88	59	0	0	0	915
3828	306	212	184	241	178	202	166	150	104	1743
3830	221	70	101	42	133	43	0	0	0	610
3832	347	196	220	181	211	209	4	0	0	1368
3837	241	107	115	55	51	65	0	0	15	649
MEAN	251.1	156.1	138.9	99.1	87.5	67.5	42.9	22.7	23.2	889.2
S.D.	77.34	72.74	55.03	74.08	71.23	74.75	69.96	48.54	49.55	480.60
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	87	120	146	97	34	29	60	35	41	649
3810	97	31	21	20	6	3	0	0	2	180
3811	74	37	27	0	0	2	0	0	0	140
3814	55	61	6	25	8	56	8	0	7	226
3816	103	36	46	22	21	19	21	10	0	278
3818	65	20	19	14	6	0	0	0	0	124
3819	31	10	1	0	0	1	0	0	0	43
3820	98	85	69	34	19	0	10	14	0	329
3822	78	61	55	18	0	0	0	0	0	212
3824	63	50	88	25	42	0	0	0	0	268
3825	117	67	91	78	31	1	0	0	0	385
3828	207	233	258	264	207	209	220	66	37	1701
3830	60	32	65	20	91	12	1	0	0	281
3832	125	77	29	27	59	67	0	0	0	384
3837	89	54	3	27	7	5	0	0	0	185
MEAN	89.9	64.9	61.6	44.7	35.4	26.9	21.3	8.3	5.8	359.0
S.D.	40.79	54.18	67.36	65.92	53.91	54.65	57.18	18.58	13.62	397.57
N	15	15	15	15	15	15	15	15	15	15

TABLE 8
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 11 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	172	75	147	111	108	85	57	62	94	911
3810	85	40	29	3	9	3	0	0	0	169
3811	129	52	36	0	0	0	0	0	0	217
3814	130	175	52	27	11	31	48	0	6	480
3816	163	100	75	49	66	65	75	15	10	618
3818	89	53	46	13	7	0	0	0	0	208
3819	43	5	8	0	0	10	0	0	0	66
3820	97	55	78	59	29	0	11	15	0	344
3822	129	60	67	14	0	0	0	0	0	270
3824	124	106	104	55	52	0	0	0	0	441
3825	140	59	64	96	22	3	0	0	0	384
3828	136	89	77	78	71	85	68	33	53	690
3830	82	42	72	15	69	18	0	0	0	298
3832	186	103	83	62	106	104	2	0	0	646
3837	109	51	24	12	15	10	0	0	7	228
MEAN	120.9	71.0	64.1	39.6	37.7	27.6	17.4	8.3	11.3	398.0
S.D.	37.83	39.65	34.46	36.18	38.06	37.39	28.52	17.61	26.60	232.51
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	654	359	514	388	338	274	263	226	309	3325
3810	383	239	152	65	74	12	0	7	7	939
3811	416	202	148	0	0	4	0	0	6	776
3814	449	560	198	112	78	193	164	0	28	1782
3816	585	387	296	241	205	207	282	47	39	2289
3818	316	207	160	71	35	0	0	0	0	789
3819	194	38	24	0	0	32	0	0	0	288
3820	404	262	307	207	104	8	53	61	0	1406
3822	478	289	286	133	5	0	0	0	0	1191
3824	353	317	364	165	231	9	2	0	0	1441
3825	589	255	290	346	141	63	0	0	0	1684
3828	649	534	519	583	456	496	454	249	194	4134
3830	363	144	238	77	293	73	1	0	0	1189
3832	658	376	332	270	376	380	6	0	0	2398
3837	439	212	142	94	73	80	0	0	22	1062
MEAN	462.0	292.1	264.7	183.5	160.6	122.1	81.7	39.3	40.3	1646.2
S.D.	138.62	137.53	136.41	160.48	148.02	155.64	142.56	82.74	89.28	1024.69
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF8.IMA

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	194	115	173	112	6	0	0	0	1	601
3815	182	91	39	45	18	60	62	9	21	527
3817	297	166	112	114	75	43	39	134	31	1011
3821	137	124	75	31	0	122	73	11	2	575
3823	194	167	133	78	119	31	1	0	0	723
3826	136	21	0	0	0	0	9	95	53	314
3827	216	48	2	0	0	0	0	19	0	285
3829	256	59	128	34	7	3	0	0	0	487
3833	205	82	88	29	50	28	14	0	8	504
3834	146	72	131	84	63	0	0	1	0	497
3838	155	101	108	46	0	0	0	1	0	411
3839	228	87	67	0	0	0	4	0	0	386
3840	233	101	79	45	40	0	0	0	0	498
3842	205	126	66	37	91	0	6	69	0	600
3844	204	154	100	72	22	0	4	28	11	595
MEAN	199.2	100.9	86.7	48.5	32.7	19.1	14.1	24.5	8.5	534.3
S.D.	44.83	42.44	48.19	36.96	38.69	34.43	23.97	41.50	15.41	175.41
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	84	47	36	29	0	0	0	0	0	196
3815	48	18	11	14	6	22	22	0	0	141
3817	99	53	39	39	37	6	6	24	16	319
3821	82	54	34	0	2	27	27	1	0	227
3823	93	20	28	6	49	10	0	9	0	215
3826	51	1	0	0	0	0	5	45	3	105
3827	54	10	1	0	0	0	0	25	0	90
3829	66	18	32	2	0	0	0	0	0	118
3833	55	37	51	0	16	3	0	0	0	162
3834	68	41	59	40	5	0	0	0	0	213
3838	59	11	25	13	0	2	0	0	0	110
3839	76	20	10	0	0	0	0	0	0	106
3840	91	29	31	4	2	0	0	0	0	157
3842	30	29	27	1	4	0	3	70	0	164
3844	94	68	25	12	2	0	1	15	3	220
MEAN	70.0	30.4	27.3	10.7	8.2	4.7	4.3	12.6	1.5	169.5
S.D.	20.41	19.08	16.63	14.20	14.90	8.60	8.50	20.79	4.16	62.47
N	15	15	15	15	15	15	15	15	15	15

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	76	22	35	47	0	0	0	0	0	180
3815	99	47	14	28	12	33	32	0	0	265
3817	120	65	52	69	76	12	17	79	26	516
3821	86	60	32	3	0	15	33	4	2	235
3823	101	65	90	55	40	7	0	0	0	358
3826	78	3	0	0	0	0	5	46	3	135
3827	90	16	0	0	0	0	0	14	0	120
3829	142	25	27	0	0	0	0	0	0	194
3833	134	38	37	12	35	2	0	0	0	258
3834	70	40	55	42	7	0	0	0	0	214
3838	60	34	41	13	0	0	0	0	0	148
3839	89	39	7	0	0	0	0	0	0	135
3840	136	53	45	14	4	0	0	0	0	252
3842	58	63	45	6	9	0	3	49	0	233
3844	74	92	35	12	5	0	0	6	0	224
MEAN	94.2	44.1	34.3	20.1	12.5	4.6	6.0	13.2	2.1	231.1
S.D.	27.43	22.96	23.44	22.68	21.65	9.23	11.64	24.48	6.68	100.59
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	354	184	244	188	6	0	0	0	1	977
3815	329	156	64	87	36	115	116	9	21	933
3817	516	284	203	222	188	61	62	237	73	1846
3821	305	238	141	34	2	164	133	16	4	1037
3823	388	252	251	139	208	48	1	9	0	1296
3826	265	25	0	0	0	0	19	186	59	554
3827	360	74	3	0	0	0	0	58	0	495
3829	464	102	187	36	7	3	0	0	0	799
3833	394	157	176	41	101	33	14	0	8	924
3834	284	153	245	166	75	0	0	1	0	924
3838	274	146	174	72	0	2	0	1	0	669
3839	393	146	84	0	0	0	4	0	0	627
3840	460	183	155	63	46	0	0	0	0	907
3842	293	218	138	44	104	0	12	188	0	997
3844	372	314	160	96	29	0	5	49	14	1039
MEAN	363.4	175.5	148.3	79.2	53.5	28.4	24.4	50.3	12.0	934.9
S.D.	75.05	77.45	80.03	70.42	69.03	50.11	43.75	82.11	22.94	328.52
N	15	15	15	15	15	15	15	15	15	15

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	112	38	89	7	0	2	0	14	28	290
3810	216	182	200	190	145	217	135	159	87	1531
3811	262	156	165	78	28	72	8	0	0	769
3814	343	196	147	256	238	184	111	40	110	1625
3816	338	206	189	118	221	165	131	115	51	1534
3818	170	122	78	48	1	121	30	125	99	794
3819	218	140	68	111	10	10	22	32	11	622
3820	290	218	194	152	146	148	122	141	88	1499
3822	276	193	167	125	89	59	132	37	80	1158
3824	148	154	158	84	87	131	98	67	49	976
3825	314	219	233	171	176	140	116	138	65	1572
3828	366	276	227	174	228	159	179	114	214	1937
3830	196	147	108	97	32	13	0	42	67	702
3832	275	237	152	114	49	21	0	147	19	1014
3837	354	162	139	110	184	26	73	48	36	1132
MEAN	258.5	176.4	154.3	122.3	108.9	97.9	77.1	81.3	66.9	1143.7
S.D.	79.13	56.15	51.13	60.74	87.20	72.28	61.32	54.34	52.43	461.14
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	17	11	48	0	0	0	0	4	0	80
3810	113	55	71	35	73	58	95	34	40	574
3811	98	17	75	9	3	23	2	0	0	227
3814	101	31	46	28	42	26	45	3	33	355
3816	74	32	54	18	17	17	7	17	2	238
3818	56	14	25	15	0	40	16	194	82	442
3819	66	16	4	36	2	0	0	18	0	142
3820	113	74	69	34	47	33	42	87	27	526
3822	99	52	45	44	35	43	47	2	13	380
3824	78	58	86	19	16	38	38	21	12	366
3825	109	73	53	43	51	63	51	36	15	494
3828	99	123	51	47	139	41	38	137	89	764
3830	76	48	49	26	17	1	0	17	35	269
3832	130	62	53	32	13	7	0	37	3	337
3837	152	51	67	54	39	19	23	15	0	420
MEAN	92.1	47.8	53.1	29.3	32.9	27.3	26.9	41.5	23.4	374.3
S.D.	32.52	29.70	20.17	15.01	36.56	20.26	27.35	55.81	28.82	175.17
N	15	15	15	15	15	15	15	15	15	15

TABLE 9
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 1 DAY POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	10	11	35	0	0	0	0	5	5	66
3810	140	93	105	100	61	112	65	54	16	746
3811	112	49	75	48	9	31	0	0	0	324
3814	195	93	50	80	102	56	53	8	33	670
3816	160	120	115	48	113	79	40	42	34	751
3818	73	50	29	30	0	69	17	32	52	352
3819	105	65	19	82	4	0	12	17	0	304
3820	143	65	96	68	57	45	45	55	29	603
3822	138	91	53	40	34	10	30	10	24	430
3824	138	77	96	52	67	43	49	34	37	593
3825	117	90	86	62	73	59	30	26	7	550
3828	185	143	97	100	125	87	75	69	107	988
3830	72	57	34	26	14	0	0	16	18	237
3832	156	75	75	67	10	12	0	42	10	447
3837	189	74	52	48	54	12	30	17	6	482
MEAN	128.9	76.9	67.8	56.7	48.2	41.0	29.7	28.5	25.2	502.9
S.D.	49.87	31.23	30.92	27.51	42.43	35.60	24.72	20.62	27.32	234.38
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	139	60	172	7	0	2	0	23	33	436
3810	469	330	376	325	279	387	295	247	143	2851
3811	472	222	315	135	40	126	10	0	0	1320
3814	639	320	243	364	382	266	209	51	176	2650
3816	572	358	358	184	351	261	178	174	87	2523
3818	299	186	132	93	1	230	63	351	233	1588
3819	389	221	91	229	16	10	34	67	11	1068
3820	546	357	359	254	250	226	209	283	144	2628
3822	513	336	265	209	158	112	209	49	117	1968
3824	364	289	340	155	170	212	185	122	98	1935
3825	540	382	372	276	300	262	197	200	87	2616
3828	650	542	375	321	492	287	292	320	410	3689
3830	344	252	191	149	63	14	0	75	120	1208
3832	561	374	280	213	72	40	0	226	32	1798
3837	695	287	258	212	277	57	126	80	42	2034
MEAN	479.5	301.1	275.1	208.4	190.1	166.1	133.8	151.2	115.5	2020.8
S.D.	149.75	108.72	93.65	94.05	156.13	121.93	107.11	114.04	103.91	830.73
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF9.IMA

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 2 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	159	135	16	13	0	0	0	0	0	323
3815	243	208	108	39	21	0	1	6	0	626
3817	164	108	128	65	34	3	0	40	14	556
3821	172	91	55	0	0	0	0	0	0	318
3823	251	110	59	0	0	0	0	0	5	425
3826	232	115	39	0	0	0	0	7	1	394
3827	68	24	0	0	0	1	0	0	0	93
3829	214	76	19	15	0	0	0	1	0	325
3833	192	25	7	3	0	80	31	5	0	343
3834	216	44	133	3	0	0	0	26	1	423
3838	207	114	60	12	0	0	11	11	0	415
3839	309	152	19	41	0	0	1	0	0	522
3840	176	123	65	48	0	0	0	0	0	412
3842	127	40	0	0	0	0	3	0	0	170
3844	183	160	83	3	0	16	0	1	0	446
MEAN	194.2	101.7	52.7	16.1	3.7	6.7	3.1	6.5	1.4	386.1
S.D.	56.57	52.82	44.56	21.37	9.98	20.70	8.22	11.59	3.72	136.21
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	40	55	4	0	0	0	0	0	0	99
3815	56	52	19	12	0	0	0	1	0	140
3817	53	63	44	16	32	0	0	28	2	238
3821	72	43	38	0	0	0	0	0	0	153
3823	118	40	41	1	0	0	0	0	0	200
3826	74	10	11	0	0	0	0	0	0	95
3827	15	12	0	0	0	0	0	0	0	27
3829	66	24	16	12	0	0	0	0	0	118
3833	60	8	0	0	0	23	0	0	0	91
3834	96	15	23	0	0	0	0	3	0	137
3838	45	16	28	0	0	0	2	8	0	99
3839	132	43	0	0	0	0	0	0	0	175
3840	105	61	54	21	0	0	0	0	0	241
3842	26	19	0	0	0	0	0	0	0	45
3844	69	38	2	2	0	0	0	0	0	111
MEAN	68.5	33.3	18.7	4.3	2.1	1.5	.1	2.7	.1	131.3
S.D.	32.87	19.43	18.56	7.16	8.26	5.94	.52	7.33	.52	62.43
N	15	15	15	15	15	15	15	15	15	15

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 2 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	51	42	1	0	0	0	0	0	0	94
3815	95	91	13	22	0	0	0	0	0	221
3817	157	90	80	32	27	0	0	19	5	410
3821	95	42	18	0	0	0	0	0	0	155
3823	124	46	21	0	0	0	0	0	5	196
3826	112	30	6	0	0	0	0	6	0	154
3827	9	15	0	0	0	0	0	0	0	24
3829	129	52	8	0	0	0	0	0	0	189
3833	129	20	0	0	0	34	0	0	0	183
3834	102	4	26	1	0	0	0	17	0	150
3838	69	23	23	0	0	0	5	8	0	128
3839	133	70	8	0	0	0	0	0	0	211
3840	116	59	39	8	0	0	0	0	0	222
3842	57	14	0	0	0	0	0	0	0	71
3844	72	41	2	0	0	6	0	0	0	121
MEAN	96.7	42.6	16.3	4.2	1.8	2.7	.3	3.3	.7	168.6
S.D.	38.88	26.51	21.09	9.67	6.97	8.80	1.29	6.45	1.76	87.71
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	250	232	21	13	0	0	0	0	0	516
3815	394	351	140	73	21	0	1	7	0	987
3817	374	261	252	113	93	3	0	87	21	1204
3821	339	176	111	0	0	0	0	0	0	626
3823	493	196	121	1	0	0	0	0	10	821
3826	418	155	56	0	0	0	0	13	1	643
3827	92	51	0	0	0	1	0	0	0	144
3829	409	152	43	27	0	0	0	1	0	632
3833	381	53	7	3	0	137	31	5	0	617
3834	414	63	182	4	0	0	0	46	1	710
3838	321	153	111	12	0	0	18	27	0	642
3839	574	265	27	41	0	0	1	0	0	908
3840	397	243	158	77	0	0	0	0	0	875
3842	210	73	0	0	0	0	3	0	0	286
3844	324	239	87	5	0	22	0	1	0	678
MEAN	359.3	177.5	87.7	24.6	7.6	10.9	3.6	12.5	2.2	685.9
S.D.	114.95	90.00	75.02	35.58	24.24	35.35	8.87	24.39	5.80	261.93
N	15	15	15	15	15	15	15	15	15	15

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 2 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	204	111	5	0	0	0	29	29	0	378
3810	192	116	70	61	49	0	0	80	94	662
3811	176	100	64	0	0	0	0	1	0	341
3814	275	196	70	128	60	0	10	0	0	739
3816	329	204	154	116	28	46	0	62	33	972
3818	177	88	90	60	43	4	28	0	0	490
3819	113	38	58	11	0	12	5	0	0	237
3820	206	144	101	48	58	31	65	88	23	764
3822	175	48	71	31	38	0	0	95	98	556
3824	167	143	55	80	6	0	0	35	3	489
3825	387	178	173	147	108	99	0	7	0	1099
3828	315	256	178	215	42	10	0	76	28	1120
3830	239	98	46	0	0	0	0	0	0	383
3832	323	224	114	16	0	1	9	138	35	860
3837	316	203	120	66	79	67	73	66	35	1025
MEAN	239.6	143.1	91.3	65.3	34.1	18.0	14.6	45.1	23.3	674.3
S.D.	79.08	65.13	48.95	62.96	33.53	30.20	24.18	44.52	32.93	292.13
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	73	63	0	0	0	0	10	6	0	152
3810	100	45	29	12	39	0	0	28	43	296
3811	60	45	10	0	0	0	0	0	1	116
3814	66	21	21	31	0	0	3	0	0	142
3816	104	49	29	7	0	6	0	1	3	199
3818	85	127	58	83	85	0	13	0	0	451
3819	60	6	21	2	0	0	0	0	0	89
3820	131	58	28	10	16	8	151	189	69	660
3822	68	41	23	0	6	0	0	39	32	209
3824	46	56	0	24	0	0	0	9	0	135
3825	88	30	40	25	49	19	0	0	0	251
3828	107	137	78	181	0	0	0	13	0	516
3830	104	53	9	0	0	0	0	0	0	166
3832	105	64	63	0	0	0	1	11	5	249
3837	80	71	44	14	27	10	71	31	5	353
MEAN	85.1	57.7	30.2	25.9	14.8	2.9	16.6	21.8	10.5	265.6
S.D.	23.22	34.67	22.88	47.97	25.19	5.59	41.39	48.01	20.75	164.33
N	15	15	15	15	15	15	15	15	15	15

TABLE 10
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 13 - 2 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	104	53	0	0	0	0	18	10	0	185
3810	96	54	26	33	29	0	0	38	34	310
3811	88	40	18	0	0	0	0	0	0	146
3814	133	65	18	37	0	0	4	0	0	257
3816	201	83	50	29	4	6	0	16	2	391
3818	108	32	30	16	21	2	12	0	0	221
3819	57	18	20	5	0	13	1	0	0	114
3820	117	82	50	17	36	25	36	30	4	397
3822	70	18	32	0	14	0	0	64	33	231
3824	87	94	3	52	0	0	0	12	0	248
3825	142	63	63	41	40	40	0	0	0	389
3828	150	99	69	100	6	0	0	38	0	462
3830	85	26	18	0	0	0	0	0	0	129
3832	124	70	66	2	0	0	0	55	11	328
3837	119	111	68	25	30	29	57	42	12	493
MEAN	112.1	60.5	35.4	23.8	12.0	7.7	8.5	20.3	6.4	286.7
S.D.	35.84	29.73	23.75	27.24	15.04	13.07	16.77	22.31	11.70	120.62
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	381	227	5	0	0	0	57	45	0	715
3810	388	215	125	106	117	0	0	146	171	1268
3811	324	185	92	0	0	0	0	1	1	603
3814	474	282	109	196	60	0	17	0	0	1138
3816	634	336	233	152	32	58	0	79	38	1562
3818	370	247	178	159	149	6	53	0	0	1162
3819	230	62	99	18	0	25	6	0	0	440
3820	454	284	179	75	110	64	252	307	96	1821
3822	313	107	126	31	58	0	0	198	163	996
3824	300	293	58	156	6	0	0	56	3	872
3825	617	271	276	213	197	158	0	7	0	1739
3828	572	492	325	496	48	10	0	127	28	2098
3830	428	177	73	0	0	0	0	0	0	678
3832	552	358	243	18	0	1	10	204	51	1437
3837	515	385	232	105	136	106	201	139	52	1871
MEAN	436.8	261.4	156.9	115.0	60.9	28.5	39.7	87.3	40.2	1226.7
S.D.	122.55	108.72	90.22	129.18	65.49	47.97	78.70	96.01	58.75	514.79
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF10.IMA

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 4 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	150	104	88	36	0	5	0	0	0	383
3815	242	158	48	0	0	0	1	0	0	449
3817	179	122	99	14	0	0	0	0	19	433
3821	208	113	103	37	22	0	1	0	0	484
3823	281	156	58	0	0	0	0	0	0	495
3826	237	107	50	5	0	0	0	0	0	399
3827	130	12	0	0	0	0	0	0	0	142
3829	213	128	47	0	0	2	6	2	9	407
3833	156	120	88	21	7	1	0	0	0	393
3834	183	150	81	54	34	0	0	0	36	538
3838	259	165	91	6	9	0	3	0	0	533
3839	249	127	114	101	57	24	79	0	0	751
3840	210	118	110	69	69	70	1	0	0	647
3842	188	124	70	46	6	0	0	0	10	444
3844	311	130	132	1	0	0	0	0	0	574
MEAN	213.1	122.3	78.6	26.0	13.6	6.8	6.1	.1	4.9	471.5
S.D.	50.62	35.82	33.67	30.73	22.43	18.54	20.24	.52	10.26	137.08
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	76	34	23	4	0	2	0	0	0	139
3815	78	46	0	0	0	0	0	0	0	124
3817	68	37	36	4	0	0	0	0	0	145
3821	62	48	17	12	0	0	0	0	0	139
3823	93	64	25	0	0	0	0	0	0	182
3826	54	33	1	2	0	0	0	0	0	90
3827	44	10	0	0	0	0	0	0	0	54
3829	63	56	28	3	0	0	0	0	0	150
3833	35	40	5	3	0	0	0	0	0	83
3834	78	56	20	17	2	0	0	0	1	174
3838	80	52	0	0	0	0	0	0	0	132
3839	64	30	47	67	3	0	27	0	0	238
3840	86	36	52	80	9	33	4	0	0	300
3842	39	36	25	17	2	0	0	0	2	121
3844	75	15	0	0	0	0	0	0	0	90
MEAN	66.3	39.5	18.6	13.9	1.1	2.3	2.1	.0	.2	144.1
S.D.	17.20	14.83	17.52	25.00	2.40	8.50	6.97	.00	.56	62.29
N	15	15	15	15	15	15	15	15	15	15

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 4 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	60	67	28	7	0	6	0	0	0	168
3815	145	73	0	0	0	0	0	0	0	218
3817	149	56	40	0	0	0	0	0	10	255
3821	125	83	32	14	4	0	0	0	0	258
3823	131	71	16	0	0	0	0	0	0	218
3826	77	47	9	0	0	0	0	0	0	133
3827	52	8	0	0	0	0	0	0	0	60
3829	156	84	21	0	0	0	0	0	0	261
3833	73	64	38	0	0	0	0	0	0	175
3834	72	50	26	13	7	0	0	0	21	189
3838	117	64	0	0	0	0	0	0	0	181
3839	100	83	76	40	13	0	42	0	0	354
3840	173	64	58	66	28	27	0	0	0	416
3842	72	19	28	25	0	0	0	0	0	144
3844	103	38	0	0	0	0	0	0	0	141
MEAN	107.0	58.1	24.8	11.0	3.5	2.2	2.8	.0	2.1	211.4
S.D.	38.52	22.55	22.37	19.24	7.74	7.03	10.84	.00	5.84	89.45
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	286	205	139	47	0	13	0	0	0	690
3815	465	277	48	0	0	0	1	0	0	791
3817	396	215	175	18	0	0	0	0	29	833
3821	395	244	152	63	26	0	1	0	0	881
3823	505	291	99	0	0	0	0	0	0	895
3826	368	187	60	7	0	0	0	0	0	622
3827	226	30	0	0	0	0	0	0	0	256
3829	432	268	96	3	0	2	6	2	9	818
3833	264	224	131	24	7	1	0	0	0	651
3834	333	256	127	84	43	0	0	0	58	901
3838	456	281	91	6	9	0	3	0	0	846
3839	413	240	237	208	73	24	148	0	0	1343
3840	469	218	220	215	106	130	5	0	0	1363
3842	299	179	123	88	8	0	0	0	12	709
3844	489	183	132	1	0	0	0	0	0	805
MEAN	386.4	219.9	122.0	50.9	18.1	11.3	10.9	.1	7.2	826.9
S.D.	87.43	63.86	61.76	71.99	32.02	33.51	37.97	.52	16.15	267.34
N	15	15	15	15	15	15	15	15	15	15

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 4 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	313	165	167	143	4	0	0	0	1	793
3810	286	180	193	74	33	0	0	1	0	767
3811	218	123	113	38	0	15	0	62	47	616
3814	362	303	169	156	28	27	6	16	70	1137
3816	277	231	193	178	177	148	22	18	0	1244
3818	230	154	168	14	1	5	3	0	0	575
3819	250	78	13	5	0	0	0	0	0	346
3820	293	125	79	128	92	31	0	0	0	748
3822	167	192	138	26	155	2	11	0	3	694
3824	169	187	83	89	45	15	0	6	0	594
3825	299	167	97	30	45	20	3	0	28	689
3828	372	224	85	47	4	4	20	3	1	760
3830	225	231	8	31	0	0	0	0	0	495
3832	411	241	127	145	55	0	32	128	80	1219
3837	402	177	116	172	125	115	28	0	28	1163
MEAN	284.9	185.2	116.6	85.1	50.9	25.5	8.3	15.6	17.2	789.3
S.D.	77.41	55.76	57.71	62.52	59.47	44.71	11.42	35.05	27.58	276.64
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	154	104	88	18	0	0	0	0	0	364
3810	116	90	41	5	0	0	0	0	0	252
3811	59	41	43	3	0	0	0	4	20	170
3814	121	51	39	49	5	0	0	1	15	281
3816	51	29	24	29	25	50	0	0	0	208
3818	150	72	48	0	0	0	7	0	0	277
3819	79	19	1	0	0	0	0	0	0	99
3820	135	68	36	73	13	14	0	0	0	339
3822	69	67	42	19	59	0	0	0	2	258
3824	97	81	18	23	17	3	0	0	0	239
3825	95	87	39	55	15	5	0	0	10	306
3828	123	124	34	18	0	0	4	0	0	303
3830	107	38	3	7	0	0	0	0	2	157
3832	94	57	23	61	6	0	3	16	10	270
3837	94	48	44	79	138	54	1	0	4	462
MEAN	102.9	65.1	34.9	29.3	18.5	8.4	1.0	1.4	4.2	265.7
S.D.	30.91	28.90	20.66	27.16	36.59	18.10	2.07	4.17	6.46	88.65
N	15	15	15	15	15	15	15	15	15	15

TABLE 11
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 4 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	174	90	89	41	0	0	0	0	0	394
3810	178	79	76	2	0	0	0	0	0	335
3811	118	51	47	0	0	0	0	18	22	256
3814	188	114	61	80	0	0	0	7	21	471
3816	158	137	122	105	96	59	7	0	0	684
3818	129	69	51	2	0	4	10	0	0	265
3819	109	30	5	0	0	0	0	0	0	144
3820	121	41	37	68	9	17	0	0	0	293
3822	99	97	54	11	78	0	0	0	0	339
3824	128	102	29	28	48	8	0	6	0	349
3825	133	76	37	7	15	4	0	0	17	289
3828	150	85	42	18	0	0	6	0	0	301
3830	98	54	0	6	0	0	0	0	0	158
3832	180	103	52	37	18	0	13	63	31	497
3837	173	78	46	43	42	34	0	0	6	422
MEAN	142.4	80.4	49.9	29.9	20.4	8.4	2.4	6.3	6.5	346.5
S.D.	31.05	28.67	30.37	32.61	31.35	16.83	4.37	16.45	10.64	136.23
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	641	359	344	202	4	0	0	0	1	1551
3810	580	349	310	81	33	0	0	1	0	1354
3811	395	215	203	41	0	15	0	84	89	1042
3814	671	468	269	285	33	27	6	24	106	1889
3816	486	397	339	312	298	257	29	18	0	2136
3818	509	295	267	16	1	9	20	0	0	1117
3819	438	127	19	5	0	0	0	0	0	589
3820	549	234	152	269	114	62	0	0	0	1380
3822	335	356	234	56	292	2	11	0	5	1291
3824	394	370	130	140	110	26	0	12	0	1182
3825	527	330	173	92	75	29	3	0	55	1284
3828	645	433	161	83	4	4	30	3	1	1364
3830	430	323	11	44	0	0	0	0	2	810
3832	685	401	202	243	79	0	48	207	121	1986
3837	669	303	206	294	305	203	29	0	38	2047
MEAN	530.3	330.7	201.3	144.2	89.9	42.3	11.7	23.3	27.9	1401.5
S.D.	115.64	87.96	100.19	111.44	114.99	78.77	15.55	55.32	43.63	451.69
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF11.IMA

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 7 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	228	115	140	37	0	14	62	70	0	666
3815	200	175	129	39	0	1	0	0	3	547
3817	170	150	85	60	29	9	0	0	0	503
3821	123	74	12	35	5	4	0	1	0	254
3823	187	136	71	10	0	0	0	0	4	408
3826	222	173	64	0	0	0	4	0	0	463
3827	120	93	0	0	0	0	0	0	0	213
3829	146	94	92	124	60	48	0	3	0	567
3833	292	151	107	50	16	4	0	0	0	620
3834	220	139	49	57	3	1	0	0	1	470
3838	202	155	160	23	10	0	1	0	0	551
3839	202	97	105	63	54	0	0	0	0	521
3840	188	103	52	70	78	0	0	0	1	492
3842	158	87	56	21	4	0	0	0	0	326
3844	207	186	18	2	0	0	0	0	0	413
MEAN	191.0	128.5	76.0	39.4	17.3	5.4	4.5	4.9	.6	467.6
S.D.	44.07	36.11	47.22	33.27	25.88	12.47	15.95	18.02	1.24	127.47
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	54	31	19	0	0	0	32	6	0	142
3815	83	38	44	6	0	0	0	0	0	171
3817	89	62	5	23	0	0	0	0	0	179
3821	63	38	4	3	0	0	0	0	0	108
3823	84	68	6	3	0	0	0	0	0	161
3826	87	16	3	0	0	0	0	0	0	106
3827	41	17	0	0	0	0	0	0	0	58
3829	82	22	36	47	21	21	0	0	0	229
3833	48	53	15	12	1	0	0	0	0	129
3834	113	34	14	22	0	0	0	0	0	183
3838	71	53	11	0	0	0	0	0	0	135
3839	55	26	72	29	3	0	0	0	0	185
3840	66	61	29	18	11	0	0	0	0	185
3842	58	19	24	0	4	0	0	0	0	105
3844	86	57	6	0	0	0	0	0	0	149
MEAN	72.0	39.7	19.2	10.9	2.7	1.4	2.1	.4	.0	148.3
S.D.	19.31	17.98	19.51	14.18	5.86	5.42	8.26	1.55	.00	43.15
N	15	15	15	15	15	15	15	15	15	15

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 7 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	86	52	46	0	0	2	21	10	0	217
3815	96	47	40	14	0	0	0	0	0	197
3817	127	57	0	26	0	0	0	0	0	210
3821	89	43	9	12	2	0	0	0	0	155
3823	86	54	14	2	0	0	0	0	0	156
3826	116	57	5	0	0	0	6	0	0	184
3827	35	18	0	0	0	0	0	0	0	53
3829	105	61	54	70	22	16	0	0	0	328
3833	134	48	36	13	9	0	0	0	0	240
3834	131	71	11	22	0	0	0	0	0	235
3838	89	39	59	0	0	0	0	0	0	187
3839	109	46	71	72	16	0	0	0	0	314
3840	106	43	41	31	14	0	0	0	0	235
3842	79	42	18	3	1	0	0	0	0	143
3844	110	71	4	0	0	0	0	0	0	185
MEAN	99.9	49.9	27.2	17.7	4.3	1.2	1.8	.7	.0	202.6
S.D.	24.87	13.25	23.60	23.97	7.31	4.13	5.53	2.58	.00	67.19
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	368	198	205	37	0	16	115	86	0	1025
3815	379	260	213	59	0	1	0	0	3	915
3817	386	269	90	109	29	9	0	0	0	892
3821	275	155	25	50	7	4	0	1	0	517
3823	357	258	91	15	0	0	0	0	4	725
3826	425	246	72	0	0	0	10	0	0	753
3827	196	128	0	0	0	0	0	0	0	324
3829	333	177	182	241	103	85	0	3	0	1124
3833	474	252	158	75	26	4	0	0	0	989
3834	464	244	74	101	3	1	0	0	1	888
3838	362	247	230	23	10	0	1	0	0	873
3839	366	169	248	164	73	0	0	0	0	1020
3840	360	207	122	119	103	0	0	0	1	912
3842	295	148	98	24	9	0	0	0	0	574
3844	403	314	28	2	0	0	0	0	0	747
MEAN	362.9	218.1	122.4	67.9	24.2	8.0	8.4	6.0	.6	818.5
S.D.	70.70	53.59	79.33	68.82	37.34	21.77	29.60	22.15	1.24	215.52
N	15	15	15	15	15	15	15	15	15	15

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 7 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	366	244	257	188	63	96	88	30	0	1332
3810	233	107	107	97	119	0	0	0	0	663
3811	201	150	70	0	19	73	22	35	0	570
3814	262	119	147	4	0	24	4	2	0	562
3816	289	255	154	64	5	0	0	0	0	767
3818	219	91	31	44	9	0	0	0	0	394
3819	173	120	8	81	8	6	0	0	4	400
3820	217	184	147	57	9	29	34	10	0	687
3822	240	152	47	17	0	0	0	0	0	456
3824	219	170	0	1	0	0	0	3	0	393
3825	269	175	85	9	7	9	0	0	0	554
3828	261	40	1	17	145	148	8	0	0	620
3830	234	132	49	0	0	0	2	0	0	417
3832	355	263	283	96	0	14	8	2	12	1033
3837	352	85	144	28	16	48	10	0	0	683
MEAN	259.3	152.5	102.0	46.9	26.7	29.8	11.7	5.5	1.1	635.4
S.D.	58.38	64.68	87.41	52.32	45.83	44.05	23.25	11.32	3.20	258.46
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	172	174	92	12	5	13	8	1	0	477
3810	107	39	64	14	10	0	0	0	0	234
3811	100	58	28	0	1	33	2	3	0	225
3814	51	23	8	0	0	0	0	0	0	82
3816	50	35	21	0	0	0	0	0	0	106
3818	51	15	0	9	0	0	0	0	0	75
3819	40	19	0	16	4	1	0	0	0	80
3820	102	67	91	34	0	12	6	0	0	312
3822	104	48	25	0	0	0	0	0	0	177
3824	63	63	0	0	0	0	0	0	0	126
3825	96	43	47	0	1	0	0	0	0	187
3828	86	15	0	4	110	64	0	0	0	279
3830	76	66	53	0	0	0	0	0	0	195
3832	73	63	77	47	0	0	0	0	0	260
3837	97	29	37	2	3	13	0	0	0	181
MEAN	84.5	50.5	36.2	9.2	8.9	9.1	1.1	.3	.0	199.7
S.D.	33.23	39.01	33.18	14.12	28.10	17.80	2.49	.80	.00	106.98
N	15	15	15	15	15	15	15	15	15	15

TABLE 12
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 14 - 7 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	222	174	147	43	25	38	21	2	0	672
3810	149	59	71	27	20	0	0	0	0	326
3811	99	68	19	0	12	52	9	17	0	276
3814	110	23	18	0	0	0	0	0	0	151
3816	173	106	73	4	0	0	0	0	0	356
3818	141	25	8	17	6	0	0	0	0	197
3819	85	78	5	45	0	2	0	0	0	215
3820	110	82	87	22	0	19	2	4	0	326
3822	113	66	19	5	0	0	0	0	0	203
3824	115	77	0	0	0	0	0	0	0	192
3825	150	46	45	5	0	0	0	0	0	246
3828	118	6	0	5	45	61	6	0	0	241
3830	102	59	43	0	0	0	0	0	0	204
3832	163	137	138	45	1	1	0	0	0	485
3837	184	37	47	9	11	21	8	0	0	317
MEAN	135.6	69.5	48.0	15.1	8.0	12.9	3.1	1.5	.0	293.8
S.D.	37.76	44.01	47.25	17.19	13.07	20.99	5.89	4.42	.00	134.72
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	760	592	496	243	93	147	117	33	0	2481
3810	489	205	242	138	149	0	0	0	0	1223
3811	400	276	117	0	32	158	33	55	0	1071
3814	423	165	173	4	0	24	4	2	0	795
3816	512	396	248	68	5	0	0	0	0	1229
3818	411	131	39	70	15	0	0	0	0	666
3819	298	217	13	142	12	9	0	0	4	695
3820	429	333	325	113	9	60	42	14	0	1325
3822	457	266	91	22	0	0	0	0	0	836
3824	397	310	0	1	0	0	0	3	0	711
3825	515	264	177	14	8	9	0	0	0	987
3828	465	61	1	26	300	273	14	0	0	1140
3830	412	257	145	0	0	0	2	0	0	816
3832	591	463	498	188	1	15	8	2	12	1778
3837	633	151	228	39	30	82	18	0	0	1181
MEAN	479.5	272.5	186.2	71.2	43.6	51.8	15.9	7.3	1.1	1128.9
S.D.	113.03	135.69	159.82	76.88	82.29	81.13	30.90	15.89	3.20	478.50
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF12.IMA

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 15 - 14 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	145	92	130	66	0	0	9	0	0	442
3815	263	196	151	226	167	110	114	116	15	1358
3817	249	163	102	124	1	0	12	25	18	694
3821	193	169	113	118	86	163	30	3	3	878
3823	251	174	127	178	94	0	0	0	0	824
3826	255	171	93	0	0	0	0	0	0	519
3827	140	123	2	0	0	0	0	0	0	265
3829	306	80	129	141	182	139	66	6	3	1052
3833	211	161	130	136	109	38	43	0	0	828
3834	244	133	137	75	72	67	0	0	0	728
3838	252	104	82	81	0	0	0	0	45	564
3839	223	166	191	110	77	19	0	6	93	885
3840	214	131	119	82	117	103	110	70	29	975
3842	192	98	59	31	4	2	110	14	53	563
3844	244	179	110	59	0	4	0	0	1	597
MEAN	225.5	142.7	111.7	95.1	60.6	43.0	32.9	16.0	17.3	744.8
S.D.	44.45	36.39	42.99	62.39	64.84	58.05	44.93	33.19	27.24	272.20
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	51	24	71	0	0	0	0	0	0	146
3815	64	110	132	153	85	56	28	31	0	659
3817	76	33	37	6	0	0	0	3	4	159
3821	75	36	81	33	47	57	5	0	0	334
3823	90	62	43	14	0	0	0	0	0	209
3826	50	24	14	0	0	0	0	0	0	88
3827	67	30	0	0	0	0	0	0	0	97
3829	94	26	29	61	35	34	22	0	0	301
3833	47	47	27	13	39	0	23	0	0	196
3834	88	12	35	16	19	18	0	0	0	188
3838	94	37	23	10	0	0	0	0	6	170
3839	61	27	13	63	25	2	0	0	21	212
3840	70	28	40	15	52	20	38	15	2	280
3842	85	21	4	4	0	0	0	0	16	130
3844	70	32	13	14	0	0	0	0	0	129
MEAN	72.1	36.6	37.5	26.8	20.1	12.5	7.7	3.3	3.3	219.9
S.D.	15.83	23.40	34.50	40.19	26.44	20.59	13.01	8.60	6.51	140.99
N	15	15	15	15	15	15	15	15	15	15

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 15 - 14 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	69	36	44	8	0	0	4	0	0	161
3815	172	106	53	126	69	50	47	19	0	642
3817	160	88	52	25	0	0	9	5	2	341
3821	129	105	34	59	39	69	12	0	0	447
3823	175	124	82	34	7	0	0	0	0	422
3826	93	88	31	0	0	0	0	0	0	212
3827	71	92	0	0	0	0	0	0	0	163
3829	202	49	76	97	121	94	54	0	0	693
3833	132	60	63	38	33	0	27	0	0	353
3834	86	42	47	29	26	33	0	0	0	263
3838	120	64	62	38	0	0	0	0	20	304
3839	123	71	81	47	34	2	0	3	27	388
3840	166	108	54	30	46	48	54	24	12	542
3842	93	32	3	10	0	2	1	6	17	164
3844	117	78	36	16	0	2	0	0	0	249
MEAN	127.2	76.2	47.9	37.1	25.0	20.0	13.9	3.8	5.2	356.3
S.D.	40.75	28.61	24.64	34.97	34.47	31.06	20.92	7.51	9.10	168.93
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	265	152	245	74	0	0	13	0	0	749
3815	499	412	336	505	321	216	189	166	15	2659
3817	485	284	191	155	1	0	21	33	24	1194
3821	397	310	228	210	172	289	47	3	3	1659
3823	516	360	252	226	101	0	0	0	0	1455
3826	398	283	138	0	0	0	0	0	0	819
3827	278	245	2	0	0	0	0	0	0	525
3829	602	155	234	299	338	267	142	6	3	2046
3833	390	268	220	187	181	38	93	0	0	1377
3834	418	187	219	120	117	118	0	0	0	1179
3838	466	205	167	129	0	0	0	0	71	1038
3839	407	264	285	220	136	23	0	9	141	1485
3840	450	267	213	127	215	171	202	109	43	1797
3842	370	151	66	45	4	4	111	20	86	857
3844	431	289	159	89	0	6	0	0	1	975
MEAN	424.8	255.5	197.0	159.1	105.7	75.5	54.5	23.1	25.8	1320.9
S.D.	86.34	75.84	83.26	128.19	119.69	107.31	73.62	48.60	42.26	558.63
N	15	15	15	15	15	15	15	15	15	15

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 15 - 14 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	308	229	172	89	146	104	0	1	33	1082
3810	262	147	56	88	50	0	0	0	10	613
3811	299	156	177	112	6	0	0	16	57	823
3814	324	154	150	133	62	35	0	0	4	862
3816	307	215	147	151	98	72	11	0	0	1001
3818	221	150	110	121	33	0	0	0	0	635
3819	166	68	41	62	4	0	1	0	10	352
3820	275	145	99	110	54	0	0	0	1	684
3822	236	148	148	182	64	1	2	0	39	820
3824	160	132	92	44	12	0	4	4	77	525
3825	314	207	162	122	118	48	26	0	0	997
3828	374	142	116	7	0	31	0	0	0	670
3830	312	170	60	3	1	0	0	0	73	619
3832	423	216	231	233	227	27	23	0	55	1435
3837	336	177	119	100	160	2	0	0	53	947
MEAN	287.8	163.7	125.3	103.8	69.0	21.3	4.5	1.4	27.5	804.3
S.D.	71.04	41.03	51.62	60.92	68.24	32.07	8.65	4.17	29.10	265.88
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	100	43	62	15	34	26	0	0	1	281
3810	93	90	51	52	4	0	0	0	0	290
3811	75	19	41	37	0	0	0	0	11	183
3814	84	15	33	67	4	24	0	0	0	227
3816	49	19	20	26	20	0	1	0	0	135
3818	41	1	13	14	0	0	0	0	0	69
3819	38	17	11	14	0	0	0	0	0	80
3820	182	53	60	35	1	0	0	0	0	331
3822	98	84	68	77	16	0	0	0	8	351
3824	87	36	30	11	0	0	0	0	13	177
3825	89	63	62	47	34	5	0	0	0	300
3828	106	49	24	1	0	3	0	0	0	183
3830	102	45	14	1	0	0	0	0	14	176
3832	152	17	28	67	44	4	7	0	16	335
3837	164	75	17	1	28	0	0	0	17	302
MEAN	97.3	41.7	35.6	31.0	12.3	4.1	.5	.0	5.3	228.0
S.D.	41.92	27.43	20.19	25.93	15.67	8.64	1.81	.00	6.91	92.46
N	15	15	15	15	15	15	15	15	15	15

TABLE 13
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 15 - 14 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	168	117	68	11	57	41	0	0	17	479
3810	168	101	30	68	4	0	0	0	0	371
3811	158	95	112	51	0	0	0	0	11	427
3814	129	58	46	67	7	12	0	0	0	319
3816	156	100	65	50	5	0	5	0	0	381
3818	147	62	57	42	1	0	0	0	0	309
3819	130	39	27	35	0	0	0	0	5	236
3820	133	44	43	22	6	0	0	0	0	248
3822	149	100	79	89	19	0	0	0	13	449
3824	118	52	35	18	0	0	0	0	43	266
3825	169	83	64	31	31	11	0	0	0	389
3828	153	57	29	0	0	9	0	0	0	248
3830	110	47	16	0	0	0	0	0	21	194
3832	232	108	111	119	104	7	4	0	29	714
3837	188	94	48	0	42	0	0	0	17	389
MEAN	153.9	77.1	55.3	40.2	18.4	5.3	.6	.0	10.4	361.3
S.D.	30.27	26.58	28.78	34.78	29.52	10.85	1.59	.00	13.10	129.63
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	576	389	302	115	237	171	0	1	51	1842
3810	523	338	137	208	58	0	0	0	10	1274
3811	532	270	330	200	6	0	0	16	79	1433
3814	537	227	229	267	73	71	0	0	4	1408
3816	512	334	232	227	123	72	17	0	0	1517
3818	409	213	180	177	34	0	0	0	0	1013
3819	334	124	79	111	4	0	1	0	15	668
3820	590	242	202	167	61	0	0	0	1	1263
3822	483	332	295	348	99	1	2	0	60	1620
3824	365	220	157	73	12	0	4	4	133	968
3825	572	353	288	200	183	64	26	0	0	1686
3828	633	248	169	8	0	43	0	0	0	1101
3830	524	262	90	4	1	0	0	0	108	989
3832	807	341	370	419	375	38	34	0	100	2484
3837	688	346	184	101	230	2	0	0	87	1638
MEAN	539.0	282.6	216.3	175.0	99.7	30.8	5.6	1.4	43.2	1393.6
S.D.	119.98	71.86	86.62	114.56	111.06	48.28	10.93	4.17	47.59	442.13
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF13.IMA

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 16 - 21 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	216	111	63	21	6	8	7	2	1	435
3815	287	215	181	127	115	1	5	3	0	934
3817	205	136	87	4	0	0	0	36	6	474
3821	202	73	48	21	1	0	1	0	0	346
3823	226	106	0	0	0	0	0	0	0	332
3826	193	0	10	109	0	0	2	0	0	314
3827	112	5	0	0	0	0	1	0	0	118
3829	276	221	161	158	74	65	8	0	0	963
3833	168	137	42	30	0	0	0	0	0	377
3834	236	114	71	0	0	0	2	0	0	423
3838	168	85	0	0	0	0	0	0	0	253
3839	189	103	19	0	0	0	0	0	0	311
3840	201	104	96	25	0	0	0	0	0	426
3842	209	38	0	0	0	0	0	0	0	247
3844	247	123	82	0	0	0	0	0	0	452
MEAN	209.0	104.7	57.3	33.0	13.1	4.9	1.7	2.7	.5	427.0
S.D.	43.62	62.64	57.58	52.82	33.99	16.74	2.71	9.25	1.55	231.41
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	101	39	14	0	0	0	0	0	0	154
3815	87	117	71	40	20	0	0	0	0	335
3817	72	28	18	1	0	0	0	5	0	124
3821	39	35	18	6	0	0	0	0	0	98
3823	46	27	0	0	0	0	0	0	0	73
3826	49	0	0	20	0	0	0	0	0	69
3827	23	0	0	0	0	0	0	0	0	23
3829	84	24	17	27	18	31	0	0	0	201
3833	53	45	7	0	0	0	0	0	0	105
3834	74	46	18	0	0	0	0	0	0	138
3838	66	12	0	0	0	0	0	0	0	78
3839	49	25	6	0	0	0	0	0	0	80
3840	75	44	14	8	0	0	0	0	0	141
3842	61	9	0	0	0	0	0	0	0	70
3844	97	49	14	0	0	0	0	0	0	160
MEAN	65.1	33.3	13.1	6.8	2.5	2.1	.0	.3	.0	123.3
S.D.	22.15	28.27	17.70	12.35	6.70	8.00	.00	1.29	.00	74.14
N	15	15	15	15	15	15	15	15	15	15

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 16 - 21 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	118	58	33	0	0	6	0	0	0	215
3815	157	105	80	40	42	0	0	0	0	424
3817	97	75	45	0	0	0	0	19	0	236
3821	101	34	20	17	0	0	0	0	0	172
3823	154	44	0	0	0	0	0	0	0	198
3826	97	0	0	32	0	0	0	0	0	129
3827	73	1	0	0	0	0	0	0	0	74
3829	189	98	113	99	57	30	4	0	0	590
3833	76	49	13	0	0	0	0	0	0	138
3834	102	33	19	0	0	0	0	0	0	154
3838	127	35	0	0	0	0	0	0	0	162
3839	102	43	2	0	0	0	0	0	0	147
3840	118	35	50	11	0	0	0	0	0	214
3842	82	7	0	0	0	0	0	0	0	89
3844	110	66	0	0	0	0	0	0	0	176
MEAN	113.5	45.5	25.0	13.3	6.6	2.4	.3	1.3	.0	207.9
S.D.	32.15	31.40	34.17	26.99	17.65	7.79	1.03	4.91	.00	133.06
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	435	208	110	21	6	14	7	2	1	804
3815	531	437	332	207	177	1	5	3	0	1693
3817	374	239	150	5	0	0	0	60	6	834
3821	342	142	86	44	1	0	1	0	0	616
3823	426	177	0	0	0	0	0	0	0	603
3826	339	0	10	161	0	0	2	0	0	512
3827	208	6	0	0	0	0	1	0	0	215
3829	549	343	291	284	149	126	12	0	0	1754
3833	297	231	62	30	0	0	0	0	0	620
3834	412	193	108	0	0	0	2	0	0	715
3838	361	132	0	0	0	0	0	0	0	493
3839	340	171	27	0	0	0	0	0	0	538
3840	394	183	160	44	0	0	0	0	0	781
3842	352	54	0	0	0	0	0	0	0	406
3844	454	238	96	0	0	0	0	0	0	788
MEAN	387.6	183.6	95.5	53.1	22.2	9.4	2.0	4.3	.5	758.1
S.D.	86.48	115.02	103.97	89.61	57.43	32.46	3.46	15.43	1.55	425.82
N	15	15	15	15	15	15	15	15	15	15

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 16 - 21 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	308	83	84	4	0	0	0	0	0	479
3810	244	148	131	77	54	0	0	0	2	656
3811	217	102	2	0	0	3	0	41	0	365
3814	239	130	61	6	26	7	2	0	0	471
3816	280	279	3	0	0	0	0	0	0	562
3818	181	211	50	0	0	0	0	0	0	442
3819	130	54	62	18	0	0	0	0	0	264
3820	256	96	108	26	50	0	7	0	11	554
3822	234	132	10	0	0	0	0	0	0	376
3824	144	46	0	0	0	0	13	0	0	203
3825	371	225	155	79	2	3	0	0	0	835
3828	343	187	92	66	22	0	0	0	1	711
3830	260	166	114	36	0	0	0	2	1	579
3832	357	349	205	57	4	0	0	0	0	972
3837	382	201	109	63	1	0	0	0	0	756
MEAN	263.1	160.6	79.1	28.8	10.6	.9	1.5	2.9	1.0	548.3
S.D.	78.33	83.92	60.76	31.23	18.73	2.00	3.68	10.56	2.83	212.05
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	83	62	19	0	0	0	0	0	0	164
3810	110	62	49	11	0	0	0	0	0	232
3811	56	18	0	0	0	0	0	0	0	74
3814	56	13	3	0	0	0	0	0	0	72
3816	33	29	0	0	0	0	0	0	0	62
3818	34	25	5	0	0	0	0	0	0	64
3819	35	22	4	4	0	0	0	0	0	65
3820	134	35	45	10	15	0	4	0	0	243
3822	78	87	0	0	0	0	0	0	0	165
3824	63	21	0	0	0	0	0	0	0	84
3825	110	63	46	17	0	0	0	0	0	236
3828	100	63	26	6	10	0	0	0	0	205
3830	77	56	32	0	0	0	0	0	0	165
3832	73	114	29	12	0	0	0	0	0	228
3837	221	66	36	42	0	0	0	0	0	365
MEAN	84.2	49.1	19.6	6.8	1.7	.0	.3	.0	.0	161.6
S.D.	48.25	28.88	18.95	11.26	4.50	.00	1.03	.00	.00	90.76
N	15	15	15	15	15	15	15	15	15	15

TABLE 14
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 16 - 21 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	148	35	46	0	0	0	0	0	0	229
3810	140	72	77	28	0	0	0	0	0	317
3811	85	37	0	0	0	0	0	8	0	130
3814	142	38	7	0	0	2	0	0	0	189
3816	164	144	0	0	0	0	0	0	0	308
3818	123	65	22	0	0	0	0	0	0	210
3819	76	34	17	11	0	0	0	0	0	138
3820	140	46	52	14	28	0	6	0	0	286
3822	127	45	0	0	0	0	0	0	0	172
3824	102	13	0	0	0	0	8	0	0	123
3825	169	89	74	36	0	0	0	0	0	368
3828	175	78	41	21	5	0	0	0	0	320
3830	99	65	26	0	0	0	0	0	0	190
3832	192	175	86	16	0	0	0	0	0	469
3837	193	70	55	34	0	0	0	0	0	352
MEAN	138.3	67.1	33.5	10.7	2.2	.1	.9	.5	.0	253.4
S.D.	36.73	43.04	30.42	13.48	7.25	.52	2.49	2.07	.00	101.66
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	539	180	149	4	0	0	0	0	0	872
3810	494	282	257	116	54	0	0	0	2	1205
3811	358	157	2	0	0	3	0	49	0	569
3814	437	181	71	6	26	9	2	0	0	732
3816	477	452	3	0	0	0	0	0	0	932
3818	338	301	77	0	0	0	0	0	0	716
3819	241	110	83	33	0	0	0	0	0	467
3820	530	177	205	50	93	0	17	0	11	1083
3822	439	264	10	0	0	0	0	0	0	713
3824	309	80	0	0	0	0	21	0	0	410
3825	650	377	275	132	2	3	0	0	0	1439
3828	618	328	159	93	37	0	0	0	1	1236
3830	436	287	172	36	0	0	0	2	1	934
3832	622	638	320	85	4	0	0	0	0	1669
3837	796	337	200	139	1	0	0	0	0	1473
MEAN	485.6	276.7	132.2	46.3	14.5	1.0	2.7	3.4	1.0	963.3
S.D.	146.52	143.36	106.56	52.71	27.38	2.45	6.69	12.63	2.83	380.47
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF14.IMA

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 17 - 28 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	278	122	127	39	105	0	0	0	0	671
3815	260	136	142	17	8	0	158	16	0	737
3817	270	88	120	70	62	0	0	0	0	610
3821	189	81	97	13	7	0	0	0	0	387
3823	233	101	118	21	0	0	0	0	0	473
3826	248	61	85	113	1	0	3	16	0	527
3827	96	108	0	0	0	0	0	0	0	204
3829	238	157	83	138	162	46	81	19	20	944
3833	263	69	41	63	7	0	0	0	0	443
3834	216	128	119	90	96	12	2	0	0	663
3838	293	106	146	24	1	10	53	0	0	633
3839	203	110	1	0	0	0	0	0	0	314
3840	242	97	106	85	71	39	3	0	0	643
3842	203	95	76	11	0	0	0	0	0	385
3844	259	77	17	0	0	65	5	0	0	423
MEAN	232.7	102.4	85.2	45.6	34.7	11.5	20.3	3.4	1.3	537.1
S.D.	48.12	26.02	49.07	44.67	51.76	20.93	44.86	7.07	5.16	188.51
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	111	44	76	21	47	0	0	0	0	299
3815	79	48	52	4	0	0	41	2	0	226
3817	63	25	35	22	13	0	0	0	0	158
3821	55	22	31	12	0	0	0	0	0	120
3823	56	47	23	0	0	0	0	0	0	126
3826	83	11	17	7	0	0	0	0	0	118
3827	32	28	0	0	0	0	0	0	0	60
3829	82	23	102	49	29	4	2	11	6	308
3833	71	13	13	29	3	0	0	0	0	129
3834	97	33	40	51	20	0	0	0	0	241
3838	58	49	34	0	0	0	19	0	0	160
3839	88	29	0	0	0	0	0	0	0	117
3840	95	29	39	59	4	10	0	0	0	236
3842	78	36	13	6	1	0	0	0	0	134
3844	115	9	0	0	0	0	0	0	0	124
MEAN	77.5	29.7	31.7	17.3	7.8	.9	4.1	.9	.4	170.4
S.D.	22.44	13.23	28.61	20.68	13.97	2.71	11.31	2.85	1.55	73.49
N	15	15	15	15	15	15	15	15	15	15

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 17 - 28 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	129	43	72	7	50	0	0	0	0	301
3815	133	67	70	14	0	0	63	2	0	349
3817	121	42	38	17	21	0	0	0	0	239
3821	110	46	68	5	0	0	0	0	0	229
3823	151	54	36	0	0	0	0	0	0	241
3826	136	17	35	32	0	0	0	11	0	231
3827	66	59	0	0	0	0	0	0	0	125
3829	156	114	56	56	97	19	13	8	14	533
3833	112	21	19	12	0	0	0	0	0	164
3834	116	59	59	44	32	0	0	0	0	310
3838	137	48	33	0	0	6	25	0	0	249
3839	92	41	0	0	0	0	0	0	0	133
3840	124	47	60	28	22	8	0	0	0	289
3842	81	36	21	0	0	0	0	0	0	138
3844	161	23	0	0	0	0	0	0	0	184
MEAN	121.7	47.8	37.8	14.3	14.8	2.2	6.7	1.4	.9	247.7
S.D.	26.87	23.25	25.84	17.93	27.48	5.27	17.08	3.38	3.61	104.25
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	518	209	275	67	202	0	0	0	0	1271
3815	472	251	264	35	8	0	262	20	0	1312
3817	454	155	193	109	96	0	0	0	0	1007
3821	354	149	196	30	7	0	0	0	0	736
3823	440	202	177	21	0	0	0	0	0	840
3826	467	89	137	152	1	0	3	27	0	876
3827	194	195	0	0	0	0	0	0	0	389
3829	476	294	241	243	288	69	96	38	40	1785
3833	446	103	73	104	10	0	0	0	0	736
3834	429	220	218	185	148	12	2	0	0	1214
3838	488	203	213	24	1	16	97	0	0	1042
3839	383	180	1	0	0	0	0	0	0	564
3840	461	173	205	172	97	57	3	0	0	1168
3842	362	167	110	17	1	0	0	0	0	657
3844	535	109	17	0	0	65	5	0	0	731
MEAN	431.9	179.9	154.7	77.3	57.3	14.6	31.2	5.7	2.7	955.2
S.D.	83.46	55.27	93.72	78.84	90.75	25.96	72.07	12.22	10.33	355.22
N	15	15	15	15	15	15	15	15	15	15

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 17 - 28 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	284	160	176	169	166	233	226	32	0	1446
3810	184	84	140	50	22	0	0	0	0	480
3811	234	119	135	57	10	14	0	0	42	611
3814	308	174	134	71	7	0	3	0	0	697
3816	387	242	56	31	0	0	0	0	0	716
3818	227	144	45	4	0	1	1	7	4	433
3819	192	95	64	15	0	0	0	12	14	392
3820	227	116	123	56	7	104	162	13	0	808
3822	187	144	119	0	0	0	1	0	0	451
3824	199	119	109	29	1	0	0	18	47	522
3825	342	169	173	127	106	48	132	16	0	1113
3828	290	167	152	129	123	48	0	0	0	909
3830	292	171	147	65	118	50	63	0	5	911
3832	455	287	340	220	131	96	355	101	78	2063
3837	286	214	156	51	54	36	69	0	1	867
MEAN	272.9	160.3	137.9	71.6	49.7	42.0	67.5	13.3	12.7	827.9
S.D.	78.45	54.79	68.86	63.03	60.71	63.51	107.32	26.09	23.70	445.90
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	75	78	96	30	35	38	51	0	0	403
3810	86	65	56	12	0	0	0	0	0	219
3811	50	40	23	9	0	0	0	0	3	125
3814	71	40	28	0	0	0	0	0	0	139
3816	60	30	4	0	0	0	0	0	0	94
3818	63	41	5	0	0	0	0	0	0	109
3819	43	21	11	0	0	0	0	0	0	75
3820	104	73	61	14	0	20	46	7	0	325
3822	158	72	61	0	0	0	0	0	0	291
3824	98	47	18	3	0	0	0	2	23	191
3825	72	40	59	30	34	15	27	1	0	278
3828	84	52	52	26	12	7	0	0	0	233
3830	178	63	48	12	20	20	22	0	2	365
3832	80	35	35	35	20	19	110	52	16	402
3837	124	57	37	7	8	0	34	2	0	269
MEAN	89.7	50.3	39.6	11.9	8.6	7.9	19.3	4.3	2.9	234.5
S.D.	38.06	17.11	25.57	12.57	12.76	11.76	31.14	13.33	6.91	110.88
N	15	15	15	15	15	15	15	15	15	15

TABLE 15
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 17 - 28 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	108	58	94	68	73	131	60	4	0	596
3810	114	44	53	24	0	0	0	0	0	235
3811	103	43	60	22	0	0	0	0	37	265
3814	166	72	40	0	0	0	0	0	0	278
3816	248	146	9	0	0	0	0	0	0	403
3818	165	82	11	2	0	0	0	1	0	261
3819	89	41	20	2	0	0	0	0	5	157
3820	94	39	58	18	0	36	33	4	0	282
3822	106	78	26	0	0	0	0	0	0	210
3824	187	80	50	6	0	0	0	10	14	347
3825	154	75	80	51	42	22	43	6	0	473
3828	122	57	60	51	41	16	0	0	0	347
3830	136	60	61	4	38	22	18	0	0	339
3832	235	133	157	115	61	48	171	21	20	961
3837	134	105	60	22	26	5	27	0	0	379
MEAN	144.1	74.2	55.9	25.7	18.7	18.7	23.5	3.1	5.1	368.9
S.D.	48.89	32.36	36.87	32.84	25.84	34.62	45.18	5.79	10.71	196.84
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	467	296	366	267	274	402	337	36	0	2445
3810	384	193	249	86	22	0	0	0	0	934
3811	387	202	218	88	10	14	0	0	82	1001
3814	545	286	202	71	7	0	3	0	0	1114
3816	695	418	69	31	0	0	0	0	0	1213
3818	455	267	61	6	0	1	1	8	4	803
3819	324	157	95	17	0	0	0	12	19	624
3820	425	228	242	88	7	160	241	24	0	1415
3822	451	294	206	0	0	0	1	0	0	952
3824	484	246	177	38	1	0	0	30	84	1060
3825	568	284	312	208	182	85	202	23	0	1864
3828	496	276	264	206	176	7[illegible]	0	0	0	1489
3830	606	294	256	81	176	9[illegible]	103	0	7	1615
3832	770	455	532	370	212	16[illegible]	636	174	114	3426
3837	544	376	253	80	88	41	130	2	1	1515
MEAN	506.7	284.8	233.5	109.1	77.0	68.6	110.3	20.6	20.7	1431.3
S.D.	119.13	81.09	118.36	106.52	98.05	108.82	181.68	44.26	38.50	718.77
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF15.IMA

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 18 - 35 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	205	183	98	70	8	10	2	0	1	577
3815	253	151	174	213	132	80	60	106	88	1257
3817	194	168	76	46	61	80	15	0	0	640
3821	106	94	61	5	0	29	0	0	0	295
3823	222	158	119	57	40	21	0	0	0	617
3826	170	159	72	107	15	0	61	25	0	609
3827	200	73	11	0	0	5	0	0	0	289
3829	316	163	114	150	62	116	70	0	0	991
3833	210	174	108	77	54	85	40	4	103	855
3834	183	148	98	176	62	107	87	0	0	861
3838	248	154	140	104	69	89	56	89	1	950
3839	186	146	152	104	9	6	3	7	30	643
3840	190	153	99	70	46	118	35	9	66	786
3842	205	90	78	51	12	2	46	115	49	648
3844	266	169	88	29	0	0	109	167	24	852
MEAN	210.3	145.5	99.2	83.9	38.0	49.9	38.9	34.8	24.1	724.7
S.D.	48.06	32.82	39.49	60.25	36.92	47.00	35.10	55.34	35.71	253.76
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	87	78	40	15	0	0	0	0	0	220
3815	126	69	35	46	64	17	31	54	14	456
3817	40	42	27	6	9	15	4	0	0	143
3821	55	23	21	0	0	11	0	0	0	110
3823	43	36	51	35	4	6	0	0	0	175
3826	56	29	28	14	1	0	12	2	0	142
3827	58	19	0	0	0	0	0	0	0	77
3829	104	33	39	25	20	15	12	0	0	248
3833	50	37	55	40	17	20	0	0	31	250
3834	88	88	70	77	27	23	14	0	0	387
3838	101	32	43	3	13	14	12	12	0	230
3839	53	44	83	35	2	0	0	0	11	228
3840	95	30	71	23	1	13	18	1	14	266
3842	56	36	11	27	5	0	6	61	14	216
3844	63	72	14	7	0	0	59	40	3	258
MEAN	71.7	44.5	39.2	23.5	10.9	8.9	11.2	11.3	5.8	227.1
S.D.	26.16	21.43	23.71	21.02	16.99	8.42	15.96	21.48	9.16	98.14
N	15	15	15	15	15	15	15	15	15	15

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 18 - 35 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	78	63	28	21	0	0	0	0	0	190
3815	147	71	99	79	72	45	21	33	35	602
3817	134	86	29	15	17	28	0	0	0	309
3821	71	36	20	2	0	18	0	0	0	147
3823	109	85	77	27	0	10	0	0	0	308
3826	81	56	44	15	4	0	34	0	0	234
3827	122	38	0	0	0	4	0	0	0	164
3829	158	80	60	66	24	27	36	0	0	451
3833	103	50	38	34	28	18	0	0	50	321
3834	100	68	49	63	21	23	20	0	0	344
3838	144	70	59	41	23	21	0	39	0	397
3839	103	56	46	10	0	0	0	4	8	227
3840	116	72	42	38	9	29	19	8	27	360
3842	91	30	26	32	6	0	15	63	6	269
3844	130	84	48	4	0	0	67	67	4	404
MEAN	112.5	63.0	44.3	29.8	13.6	14.9	14.1	14.3	8.7	315.1
S.D.	26.51	18.27	23.90	24.33	19.20	14.14	19.59	24.05	15.68	119.99
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	370	324	166	106	8	10	2	0	1	987
3815	526	291	308	338	268	142	112	193	137	2315
3817	368	296	132	67	87	123	19	0	0	1092
3821	232	153	102	7	0	58	0	0	0	552
3823	374	279	247	119	44	37	0	0	0	1100
3826	307	244	144	136	20	0	107	27	0	985
3827	380	130	11	0	0	9	0	0	0	530
3829	578	276	213	241	106	158	118	0	0	1690
3833	363	261	201	151	99	123	40	4	184	1426
3834	371	304	217	316	110	153	121	0	0	1592
3838	493	256	242	148	105	124	68	140	1	1577
3839	342	246	281	149	11	6	3	11	49	1098
3840	401	255	212	131	56	160	72	18	107	1412
3842	352	156	115	110	23	2	67	239	69	1133
3844	459	325	150	40	0	0	235	274	31	1514
MEAN	394.4	253.1	182.7	137.3	62.5	73.7	64.3	60.4	38.6	1266.9
S.D.	87.41	60.99	76.67	98.47	71.32	67.25	66.60	98.38	59.67	455.41
N	15	15	15	15	15	15	15	15	15	15

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 18 - 35 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	436	222	179	195	110	183	120	53	74	1572
3810	250	177	102	76	25	0	0	0	0	630
3811	270	179	103	114	25	0	29	24	0	744
3814	256	121	142	31	29	0	50	30	0	659
3816	426	198	194	128	11	77	5	0	10	1049
3818	238	80	52	23	3	0	0	0	0	396
3819	142	119	87	25	0	0	0	0	0	373
3820	352	220	169	49	45	1	50	0	45	931
3822	300	188	81	89	28	77	1	35	59	858
3824	126	136	40	1	26	6	23	30	0	388
3825	349	199	175	185	84	116	127	6	15	1256
3828	386	207	109	94	20	134	12	2	0	964
3830	270	200	36	19	0	0	32	10	0	567
3832	428	308	227	171	88	131	53	220	85	1711
3837	365	139	119	84	48	48	40	65	28	936
MEAN	306.3	179.5	121.0	85.6	36.1	51.5	36.1	31.7	21.1	868.9
S.D.	97.18	55.07	58.39	62.92	33.52	63.49	40.46	56.15	30.07	406.38
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	71	73	45	39	25	34	55	0	13	355
3810	152	85	68	16	1	0	0	0	0	322
3811	53	37	42	19	5	0	6	7	0	169
3814	57	10	15	7	2	0	10	5	0	106
3816	108	15	19	17	0	5	0	0	1	165
3818	46	27	19	0	2	0	0	0	0	94
3819	40	19	38	0	0	0	0	0	0	97
3820	101	101	53	10	29	0	17	2	2	315
3822	89	51	41	12	3	19	0	7	11	233
3824	110	38	20	5	13	0	0	22	0	208
3825	133	76	83	54	7	23	40	1	1	418
3828	95	48	21	10	3	29	0	0	0	206
3830	145	84	45	9	0	0	1	3	0	287
3832	104	48	31	22	13	16	29	123	11	397
3837	127	36	47	19	13	3	16	9	12	282
MEAN	95.4	49.9	39.1	15.9	7.7	8.6	11.6	11.9	3.4	243.6
S.D.	35.83	28.06	19.36	14.34	9.17	12.15	17.17	31.28	5.26	106.34
N	15	15	15	15	15	15	15	15	15	15

TABLE 16
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 18 - 35 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	207	75	68	97	44	61	58	8	29	647
3810	157	143	67	25	2	0	0	0	0	394
3811	154	90	55	66	29	0	18	13	0	425
3814	118	37	43	4	4	0	23	6	0	235
3816	267	82	96	27	0	41	0	0	0	513
3818	127	17	16	4	0	0	0	0	0	164
3819	114	76	56	2	0	0	0	0	0	248
3820	139	84	58	11	20	0	14	0	13	339
3822	136	95	31	19	7	18	0	14	24	344
3824	114	110	20	0	3	0	4	20	0	271
3825	171	80	63	64	18	50	48	3	2	499
3828	174	68	43	27	4	39	0	0	0	355
3830	122	73	12	4	0	0	2	0	0	213
3832	205	113	91	112	48	47	15	72	14	717
3837	185	52	33	32	29	22	16	11	17	397
MEAN	159.3	79.7	50.1	32.9	13.9	18.5	13.2	9.8	6.6	384.1
S.D.	43.27	30.63	25.29	35.63	16.60	22.82	18.14	18.40	10.08	157.54
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	714	370	292	331	179	278	233	61	116	2574
3810	559	405	237	117	28	0	0	0	0	1346
3811	477	306	200	199	59	0	53	44	0	1338
3814	431	168	200	42	35	0	83	41	0	1000
3816	801	295	309	172	11	123	5	0	11	1727
3818	411	124	87	27	5	0	0	0	0	654
3819	296	214	181	27	0	0	0	0	0	718
3820	592	405	280	70	94	1	81	2	60	1585
3822	525	334	153	120	38	114	1	56	94	1435
3824	350	284	80	6	42	6	27	72	0	867
3825	653	355	321	303	109	189	215	10	18	2173
3828	655	323	173	131	27	202	12	2	0	1525
3830	537	357	93	32	0	0	35	13	0	1067
3832	737	469	349	305	149	194	97	415	110	2825
3837	677	227	199	135	90	73	72	85	57	1615
MEAN	561.0	309.1	210.3	134.5	57.7	78.7	60.9	53.4	31.1	1496.6
S.D.	148.03	93.99	86.72	108.57	55.18	97.14	74.54	104.41	44.09	635.50
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF16.IMA

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 19 - 42 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3813	315	169	97	136	157	23	37	0	0	934
3815	221	201	198	176	168	107	142	56	0	1269
3817	270	200	168	105	20	0	0	0	68	831
3821	182	54	106	0	1	0	1	0	0	344
3823	301	279	217	163	153	118	113	62	0	1406
3826	184	149	114	115	2	0	0	0	0	564
3827	244	101	0	0	0	0	1	0	4	350
3829	287	157	202	173	227	139	63	0	0	1248
3833	208	155	82	96	123	114	0	0	0	778
3834	212	132	83	94	22	0	0	0	81	624
3838	226	117	130	99	91	8	0	0	0	671
3839	270	153	144	125	57	2	0	0	0	751
3840	253	182	139	98	159	52	115	25	23	1046
3842	337	149	112	81	13	0	0	0	0	692
3844	230	174	104	20	0	5	0	1	0	534
MEAN	249.3	158.1	126.4	98.7	79.5	37.9	31.5	9.6	11.7	802.8
S.D.	46.76	50.59	55.57	56.09	78.34	53.12	51.16	21.08	26.27	323.63
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3813	71	108	58	45	46	9	16	0	0	353
3815	217	155	80	169	108	31	24	31	0	815
3817	62	48	43	27	4	0	0	0	28	212
3821	47	26	31	0	0	0	0	0	0	104
3823	87	63	39	27	99	31	22	20	0	388
3826	34	48	32	8	0	0	0	0	0	122
3827	55	12	0	0	0	0	0	0	0	67
3829	67	43	13	49	26	49	4	0	0	251
3833	48	68	38	25	43	16	0	0	0	238
3834	123	36	36	21	0	0	0	0	26	242
3838	85	33	60	23	31	0	0	0	0	232
3839	62	36	48	39	12	0	0	0	0	197
3840	79	69	37	20	15	31	30	10	6	297
3842	180	98	26	19	3	0	0	0	0	326
3844	95	90	23	0	4	0	0	0	0	212
MEAN	87.5	62.2	37.6	31.5	26.1	11.1	6.4	4.1	4.0	270.4
S.D.	50.59	37.49	19.46	41.00	35.14	16.39	10.75	9.31	9.47	174.85
N	15	15	15	15	15	15	15	15	15	15

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 19 - 42 DAYS POSTEXPOSURE

BLOCK 1 GROUP:0 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3813	117	66	57	83	90	11	19	0	0	443
3815	127	109	103	73	86	33	6	25	0	562
3817	139	79	108	48	7	0	0	0	27	408
3821	103	31	40	0	0	0	0	0	0	174
3823	170	141	140	97	84	60	51	12	0	755
3826	88	93	48	22	0	0	0	0	0	251
3827	120	31	0	0	0	0	0	0	2	153
3829	137	72	101	84	123	67	26	0	0	610
3833	118	48	43	29	43	10	0	0	0	291
3834	122	66	32	32	0	0	0	0	16	268
3838	110	37	81	59	35	0	0	0	0	322
3839	106	70	74	53	10	0	0	0	0	313
3840	119	64	60	61	94	4	42	2	12	458
3842	148	68	31	34	4	0	0	0	0	285
3844	96	72	21	0	0	2	0	0	0	191
MEAN	121.3	69.8	62.6	45.0	38.4	12.5	9.6	2.6	3.8	365.6
S.D.	20.98	29.11	38.13	31.77	44.43	22.50	17.02	6.93	8.09	172.80
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3813	503	343	212	264	293	43	72	0	0	1730
3815	565	465	381	418	362	171	172	112	0	2646
3817	471	327	319	180	31	0	0	0	123	1451
3821	332	111	177	0	1	0	1	0	0	622
3823	558	483	396	287	336	209	186	94	0	2549
3826	306	290	194	145	2	0	0	0	0	937
3827	419	144	0	0	0	0	1	0	6	570
3829	491	272	316	306	376	255	93	0	0	2109
3833	374	271	163	150	209	140	0	0	0	1307
3834	457	234	151	147	22	0	0	0	123	1134
3838	421	187	271	181	157	8	0	0	0	1225
3839	438	259	266	217	79	2	0	0	0	1261
3840	451	315	236	179	268	87	187	37	41	1801
3842	665	315	169	134	20	0	0	0	0	1303
3844	421	336	148	20	4	7	0	1	0	937
MEAN	458.1	290.1	226.6	175.2	144.0	61.5	47.5	16.3	19.5	1438.8
S.D.	91.93	101.48	102.48	115.81	148.42	88.81	75.21	36.63	43.30	626.03
N	15	15	15	15	15	15	15	15	15	15

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 19 - 42 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Fine movement										
3809	408	251	257	317	291	226	203	82	1	2036
3810	180	125	127	89	118	92	26	24	0	781
3811	231	159	65	73	16	0	0	0	6	550
3814	303	118	150	82	120	3	0	0	0	776
3816	377	177	230	112	41	0	0	0	0	937
3818	225	119	108	29	21	3	2	0	0	507
3819	181	98	128	84	129	0	0	0	0	620
3820	262	162	111	101	170	133	85	61	21	1106
3822	179	84	112	97	112	1	11	17	0	613
3824	134	186	95	1	0	0	0	21	0	437
3825	341	181	195	59	16	0	1	4	0	797
3828	344	171	146	62	3	0	0	0	2	728
3830	352	204	102	56	6	0	0	0	3	723
3832	424	276	249	198	22	0	0	0	0	1169
3837	314	187	201	122	125	1	7	0	0	957
MEAN	283.7	166.5	151.7	98.8	79.3	30.6	22.3	13.9	2.2	849.1
S.D.	91.84	53.17	60.09	74.95	82.58	67.19	54.64	25.15	5.47	389.53
N	15	15	15	15	15	15	15	15	15	15
Rearing (front and back cage)										
3809	94	86	69	58	35	29	46	6	0	423
3810	116	57	78	68	53	5	6	6	0	389
3811	50	69	16	23	4	0	4	0	0	166
3814	46	18	80	24	56	0	0	0	0	224
3816	61	38	25	8	0	0	0	0	0	132
3818	74	30	22	0	0	0	0	0	0	126
3819	41	50	29	27	19	0	0	0	0	166
3820	112	89	44	90	71	61	37	14	0	518
3822	117	54	66	60	37	0	0	3	0	337
3824	76	58	23	0	0	0	0	2	0	159
3825	89	58	106	18	0	0	0	0	0	271
3828	90	51	64	12	5	0	0	0	0	222
3830	146	53	13	26	0	0	0	0	0	238
3832	80	72	39	40	1	0	0	0	0	232
3837	160	47	45	25	70	0	2	0	0	349
MEAN	90.1	55.3	47.9	31.9	23.4	6.3	6.3	2.1	.0	263.5
S.D.	35.12	18.93	27.85	26.27	27.61	16.87	14.49	3.94	.00	116.43
N	15	15	15	15	15	15	15	15	15	15

TABLE 17
ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS

INDIVIDUAL MOTOR ACTIVITY FOR 10.0 MINUTE INTERVALS
WEEK 19 - 42 DAYS POSTEXPOSURE

BLOCK 1 GROUP:5000 PPM

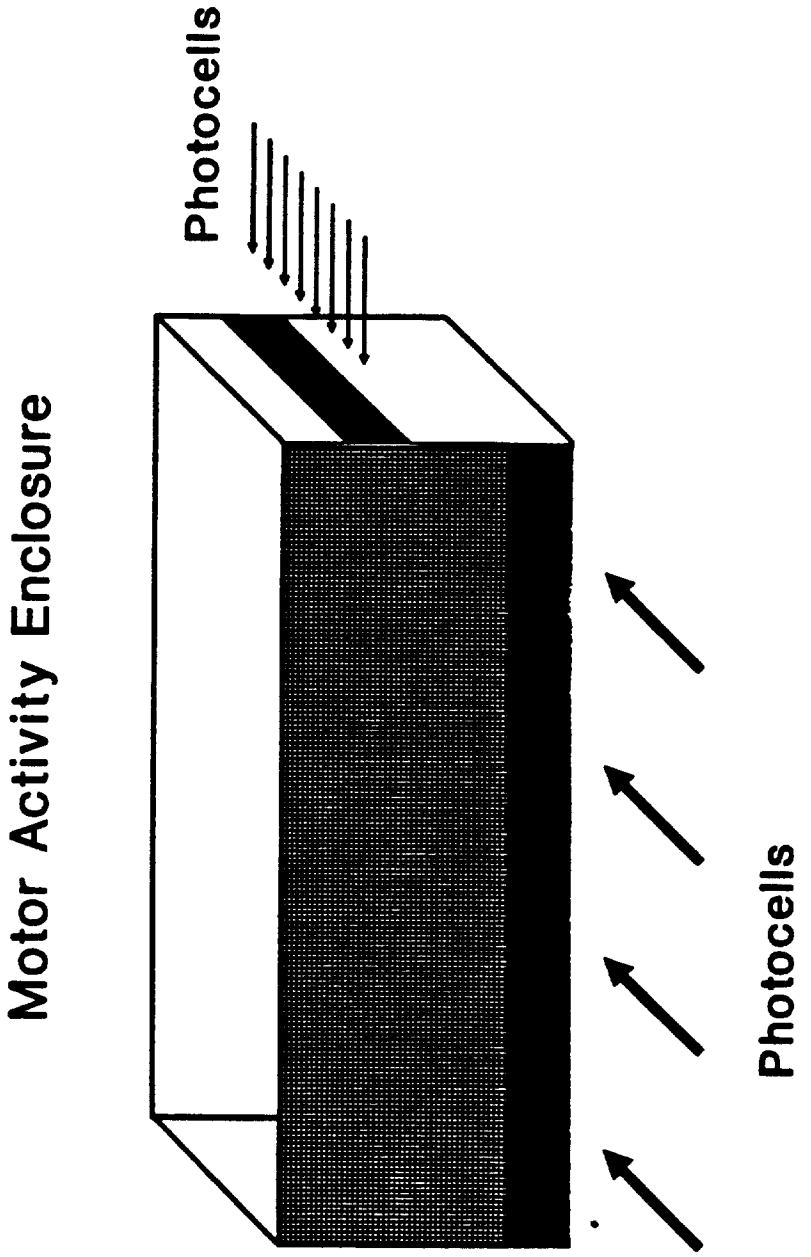
ANIMAL	INTERVAL 1	2	3	4	5	6	7	8	9	Session Totals
Ambulation										
3809	220	123	137	210	123	102	67	8	0	990
3810	124	47	63	37	28	0	4	12	0	315
3811	111	61	22	25	6	0	0	0	6	231
3814	123	62	73	39	31	0	0	0	0	328
3816	249	66	93	23	0	0	0	0	0	431
3818	137	80	50	0	0	0	0	0	0	267
3819	83	39	67	42	11	0	0	0	0	242
3820	114	68	43	55	116	42	24	8	0	470
3822	119	52	65	44	70	0	3	11	0	364
3824	121	165	45	0	0	0	0	7	0	338
3825	191	84	98	17	0	0	0	0	0	390
3828	128	62	50	19	0	0	0	0	0	259
3830	156	78	45	25	0	0	0	0	0	304
3832	238	153	114	100	10	0	0	0	0	615
3837	177	58	70	30	90	0	5	0	0	430
MEAN	152.7	79.9	69.0	44.4	32.3	9.6	6.9	3.1	.4	398.3
S.D.	50.67	37.62	30.35	51.74	44.65	27.76	17.74	4.64	1.55	192.54
N	15	15	15	15	15	15	15	15	15	15
Total counts										
3809	722	460	463	585	449	357	316	96	1	3449
3810	420	229	268	194	199	97	36	42	0	1485
3811	392	289	103	121	26	0	4	0	12	947
3814	472	198	303	145	207	3	0	0	0	1328
3816	687	281	348	143	41	0	0	0	0	1500
3818	436	229	180	29	21	3	2	0	0	900
3819	305	187	224	153	159	0	0	0	0	1028
3820	488	319	198	246	357	236	146	83	21	2094
3822	415	190	243	201	219	1	14	31	0	1314
3824	331	409	163	1	0	0	0	30	0	934
3825	621	323	399	94	16	0	1	4	0	1458
3828	562	284	260	93	8	0	0	0	2	1209
3830	654	335	160	107	6	0	0	0	3	1265
3832	742	501	402	338	33	0	0	0	0	2016
3837	651	292	316	177	285	1	14	0	0	1736
MEAN	526.5	301.7	268.7	175.1	135.1	46.5	35.5	19.1	2.6	1510.9
S.D.	144.95	94.91	102.90	140.30	145.54	106.94	86.17	31.95	5.96	648.44
N	15	15	15	15	15	15	15	15	15	15

RPT_NT:IPASRF17.IMA

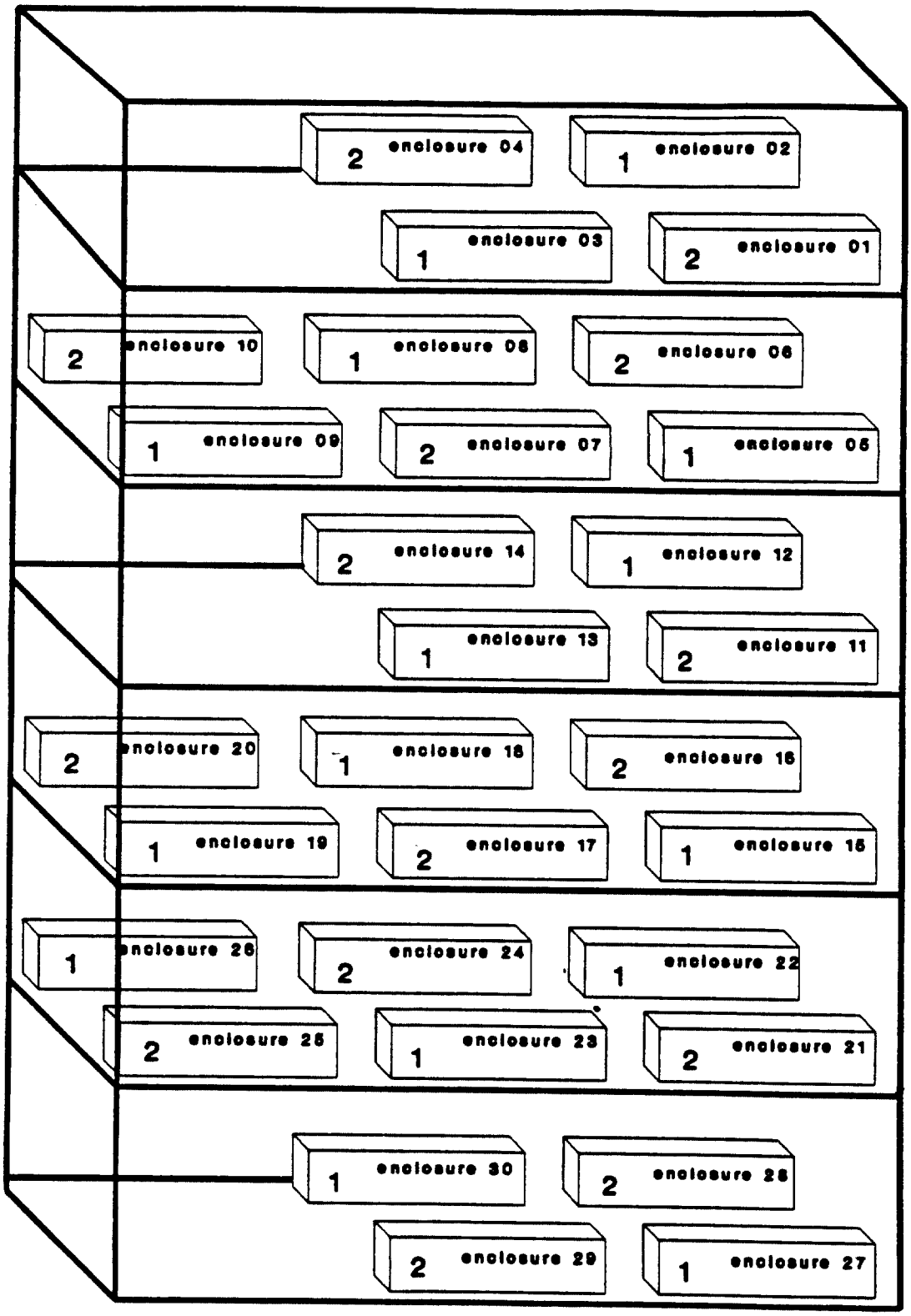
Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

GROUP CAGE POSITION

A diagram of a testing enclosure and a diagram of the motor activity testing apparatus, depicting the assigned group number to each of the 30 enclosures, are presented on the following two pages. The numbers printed within each enclosure (1 or 2) represent the exposure groups for this study such that 1 = 0 ppm and 2 = 5000 ppm. This distribution pattern was selected to distribute the exposure groups throughout the individual enclosures during the study and to minimize clustering of groups within levels and between adjacent levels on the rack, during an individual testing session.


Motor Activity Enclosure
Photocells
Photocells

GROUP CAGE POSITION



Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

MOTOR ACTIVITY SYSTEM DIAGNOSTIC PROCEDURES

A predetermined series of manual beam interruptions for each animal enclosure (including spare enclosures) was used to evaluate the function of each photocell beam, the proper routing of activity counts from individual animal enclosures to the raw data, and the appropriate differentiation of photocell interruptions into fine movement, ambulation, rearing activity, and total activity. Possible photocell and/or power supply malfunctions were evaluated before and after each test session with an integrated diagnostics routine provided by the supplier. These procedures verified that all components of the motor activity system operated properly prior to the start of testing.

Apparatus

Large Metal Sheet	Five inches wide and of sufficient length to extend down to the bottom of the testing cages.
Small Metal Sheet	One inch wide and of sufficient length to extend down approximately half way to the bottom of the testing cages.
Beam Assignments	Locomotor photocell beams - Numbered L1-L4 from left to right, respectively, when viewed from the front of the cage. Rearing photocell beams - Numbered R1-R8 from the rear to the front of each cage, respectively.

Definitions

Beam	Infra-red photocell beam.
Closed Beam	An interrupted photocell beam.
Open Beam	An uninterrupted photocell beam.
Interface Box	One of 3 connection boxes that services 10 of the 30 animal enclosures. The interface boxes are junction points for power supply, animal enclosure input and output cables, and computer input cables.
Interruption Sequence	A chronological sequence of photocell interruptions during a test. Beam number(s) between commas represent closed beam(s) at that time during the sequence. First example; closing beam 1 alone followed by beams 1 and 2 simultaneously and then beam 2 alone is represented as 1,1-2,2. Second example; beam 1 closure followed by beam 1 opening then beam 1 closure is represented as 1,1.

Ambulatory Activity	Sequential interruptions of adjacent photocells in the lower beam panel indicating that the animal has changed its location in the cage.
Fine Motor Activity	Repetitive interruptions of a single photocell from the lower beam panel without interruption of adjacent beams on this panel.
Rearing Activity	Interruptions of photocells in the upper beam panel. Concurrent interruptions of adjacent photocells constitute 1 rearing event and are registered as 1 count.
Total Activity	Sum of ambulatory, fine, and rearing activity.

Test Procedure

Preliminary	Load the identity of the cage numbers and beam set numbers onto a 3.5" floppy disk. Set up the header under PAS/F for the maintenance test. Use a different file name for each of the tests described below. Use a sufficient test session length to complete each test. Perform photocell diagnostics before running the test and skip the remaining "no repeat" questions.
Ambulatory Activity	Introduce the large metal sheet into the left front corner of the cage so that it extends to the bottom of the cage and closes beam L1. Slide the metal sheet across the front of the cage from beam L1 to L4 and back from L4 to L1, 5 times. The resulting L beam closure sequence (1 (1-2,2-3,3-4,4-3,3-2,2-1) X 5) should yield either 30 ambulation counts (counter 4) and 1 fine movement count (counter 1) or 31 ambulation counts and 0 fine movement counts, depending on the status of the beam L1 at the start of the test.
Fine Motor Activity	Introduce the large metal sheet into the left front corner of the cage. Lower and raise the metal sheet so that beam L1 is opened and closed 5 times. Leave beam L1 open and move the sheet to the right, over beam L2. Lower and raise the metal sheet as you did for beam L1. Repeat the procedure for beams L3 and L4. The resulting L beam closure sequence (1,1,1,1,1,2,2,2,2,2,3,3,3,3,3,4,4,4,4,4,) should yield either 16 fine movement counts (counter 1) and 4 ambulation counts (counter 4) or 17 fine movement counts and 3 ambulation counts, depending on the status of beam L1 at the start of the test.

Rearing Activity	Introduce the small metal sheet into the cage from either side and close and open beam R1. Repeat for beams R2-R8. Repeat the sequence twice more for a total of 3 interruptions per beam. The resulting R beam closure sequence (1,2,3,4,5,6,7,8, X 3) should yield 18 counts on counter 2 and 6 counts on counter 3.
Interface Boxes	Introduce the small metal sheet into the cage and close and open beam R1. Repeat for each cage adding 1 interruption for each cage so that the number of interruptions for the individual cages increases sequentially from 1 to 10 for each set of 10 cages connected to an interface box (for example, cage 21, 1 interruption; cage 22, 2 interruptions; cage 23, 3 interruptions, etc.).

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

MOTOR ACTIVITY STATISTICAL SUMMARY

SUMMARY OF ANALYSES PERFORMED

I. BMDP P2V Analysis of Combined Test Period Data:

BMDP data files for all test sessions were combined using the BMDP Data Manager. Repeated-measures analysis (P2V) was performed using exposure level as the grouping factor and test period and test session time as the within-subjects factors. Test period-exposure level and test period-test session time-exposure level interactions were evaluated using an epsilon-adjustment procedure (Greenhouse-Geisser correction). Repeated-measures analysis was performed for ambulation counters, fine movement counters, combined rearing counters, and for all counters combined.

II. BMDP P2V Analysis of Individual Test Period Data:

Repeated-measures analysis (P2V) was performed, using exposure level as the grouping factor and test session time as the within-subjects factor, on sequential clusters of interval data from the individual test periods if significant effects ($p < 0.05$) were observed in any of the 4 interactions examined above (I). Only the counter or counters which showed significance for any of these interactions were examined. Exposure level and test session time-exposure level interactions were evaluated for all test periods. An epsilon-adjustment procedure (Greenhouse-Geisser correction) was used in evaluating time-dose interaction. Significant dose interactions ($p < 0.05$) were used to trigger further BMDP P7D statistical analysis. Significant test session time-exposure level interactions were used to indicate that exposure level significantly affected the time versus activity profile of the data.

III. BMDP P7D:

Total cumulative test session activity was intercompared for the 5000 ppm and control group for each test period by use of Levene's test for homogeneity of variances and by t-tests. The t-tests were used to delineate whether the 5000 ppm group differed from the control group. If Levene's test indicated homogeneous variances, pooled variance t-tests were used. If Levene's test indicated heterogeneous variances, separate variance t-tests were used. Similar analysis was conducted for individual counters (fine movement, rearing, and ambulation) if significant exposure level effects ($p < 0.05$) were observed for these counters during the BMDP P2V statistical analysis of individual test period data (II above).

ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN
FEMALE FISCHER 344 RATS
MOTOR ACTIVITY STATISTICAL SUMMARY
P-VALUES FOR REPEATED MEASURES ANALYSES

Program	Test Period	Block	Counters Included	p-value	
				W-D	W-T-D
Repeated Measures (P2V)	Combined Test Periods	1	sum of all	.0000	.1166
		1	fine movement	.0000	.1187
		1	rearing	.0108	.4067
		1	ambulation	.0003	.1775
		2	sum of all	.0001	.1165
		2	fine movement	.0000	.0780
		2	rearing	.0372	.2419
		2	ambulation	.0053	.2736
				D	T-D
	Preexposure	1	sum of all	.8407	.7072
		1	fine movement	.6782	.5819
		1	rearing	.9224	.8408
		1	ambulation	.9228	.8403
		2	sum of all	.2589	.0725
		2	fine movement	.3145	.0643
		2	rearing	.3195	.0786
		2	ambulation	.3757	.3326
	Week 4 (1 Day Postexposure)	1	sum of all	.0106	.0452
		1	fine movement	.0048	.0152
		1	rearing	.0817	.4764
		1	ambulation	.0658	.1897
		2	sum of all	.0230	.0657
		2	fine movement	.0270	.0868
		2	rearing	.0070	.0762
		2	ambulation	.0734	.2818
	Week 7 (1 Day Postexposure)	1	sum of all	.0127	.2062
		1	fine movement	.0070	.1223
		1	rearing	.0352	.2037
		1	ambulation	.0667	.5894
		2	sum of all	.0008	.0109
		2	fine movement	.0006	.0323
		2	rearing	.0005	.0140
		2	ambulation	.0226	.3221
	Week 9 (1 Day Postexposure)	1	sum of all	.0000	.0286
		1	fine movement	.0000	.0288
		1	rearing	.0000	.5203
		1	ambulation	.0000	.0017
		2	sum of all	.0001	.0934
		2	fine movement	.0000	.1115
		2	rearing	.0074	.2394
		2	ambulation	.0019	.2366
	Week 9 (2 Days Postexposure)	2	sum of all	.2792	.9515
		2	fine movement	.3546	.9212
		2	rearing	.2114	.6574
		2	ambulation	.3893	.9736
	Week 10 (4 Days Postexposure)	2	sum of all	.2778	.1509
		2	fine movement	.2345	.0915
		2	rearing	.2425	.3352
		2	ambulation	.7140	.3290

Interaction components: W = Test period T = Test session time D = Exposure level

ISOPROPANOL: NINETY-DAY VAPOR INHALATION NEUROTOXICITY STUDY IN FEMALE FISCHER 344 RATS
MOTOR ACTIVITY STATISTICAL SUMMARY
P-VALUES FOR REPEATED MEASURES ANALYSES

Program	Test Period	Block	Counters Included	p-value	
				D	T-D
Repeated Measures (P2V)	Week 10 (7 Days Postexposure)	2	sum of all	.5969	.0416
		2	fine movement	.7633	.0453
		2	rearing	.2047	.0775
		2	ambulation	.9982	.1741
	Week 11 (1 Day Postexposure)	1	sum of all	.0060	.0048
		1	fine movement	.0038	.0231
		1	rearing	.0636	.0596
		1	ambulation	.0037	.0221
	Week 13 (1 Day Postexposure)	1	sum of all	.0001	.9071
		1	fine movement	.0001	.8723
		1	rearing	.0002	.8978
		1	ambulation	.0003	.3796
	Week 13 (2 Days Postexposure)	1	sum of all	.0011	.3798
		1	fine movement	.0017	.3183
		1	rearing	.0062	.5673
		1	ambulation	.0047	.5183
	Week 14 (4 Days Postexposure)	1	sum of all	.0002	.0015
		1	fine movement	.0004	.0057
		1	rearing	.0002	.0108
		1	ambulation	.0033	.0230
	Week 14 (7 Days Postexposure)	1	sum of all	.0297	.0530
		1	fine movement	.0321	.0605
		1	rearing	.0954	.3461
		1	ambulation	.0263	.0256
	Week 15 (14 Days Postexposure)	1	sum of all	.6958	.0031
		1	fine movement	.5494	.0046
		1	rearing	.8531	.0722
		1	ambulation	.9282	.0257
	Week 16 (21 Days Postexposure)	1	sum of all	.1750	.0276
		1	fine movement	.1455	.0233
		1	rearing	.2156	.1605
		1	ambulation	.3013	.0709
	Week 17 (28 Days Postexposure)	1	sum of all	.0291	.1185
		1	fine movement	.0275	.1702
		1	rearing	.0724	.1498
		1	ambulation	.0442	.3243
	Week 18 (35 Days Postexposure)	1	sum of all	.2648	.0001
		1	fine movement	.2534	.0001
		1	rearing	.6615	.1219
		1	ambulation	.1884	.0002
	Week 19 (42 Days Postexposure)	1	sum of all	.7591	.3621
		1	fine movement	.7257	.4402
		1	rearing	.8992	.7778
		1	ambulation	.6286	.1737

Interaction components: T = Test session time D = Exposure level

Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

Protocol, Protocol Amendments, and Protocol Deviations

(20 Pages)

UNION CARBIDE

BUSHY RUN RESEARCH CENTER

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PROTOCOL

TITLE: Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

BRRC PROJECT ID: 93N1245

SPONSOR: Isopropanol Panel
Chemical Manufacturers Association
2501 M Street, NW
Washington, DC 20037

TESTING FACILITY: Bushy Run Research Center (BRRC)
Union Carbide Chemicals
and Plastics Company Inc.
6702 Mellon Road
Export, PA 15632-8902

Reviewed and Approved by:

Bushy Run Research Center:

Cynthia D. Driscoll — 3/26/93
Cynthia D. Driscoll, Ph.D. — Date
Study Director

Edward H. Fowler — 3/31/93
Edward H. Fowler, DVM, Ph.D. — Date
Diplomate ACVP
Associate Director

Linda J. Calisti — 4/5/93
Linda J. Calisti, B.S. — Date
Manager, Good Laboratory
Practices/Quality Assurance

John P. Van Miller — 4/6/93
John P. Van Miller, Ph.D., DABT — Date
Director

Sponsor's Representative:

Cecilia W. Spearing — 4/12/93
Cecilia W. Spearing — Date
Manager, Isopropanol Panel

OBJECTIVE

The objective of this study is to evaluate the reproducibility of the results obtained in a previous subchronic study with isopropanol in Fischer 344 rats performed at BRRC (Report Number 53-589). In that study, motor activity increases were observed in the female rats after 9 and 13 weeks of exposure to 5000 ppm isopropanol, but not in males. If this effect is reproducible, the potential reversibility of the motor activity effects will also be assessed.

Design and Basis for the Study

This study will consist of 1 exposure group, 5000 ppm isopropanol, and a control group. Each group will consist of 30 female rats. The exposures will be conducted 5 days each week, 6 hours each day. Half of the rats in each exposure group will be exposed to isopropanol for 9 weeks, and the other half will continue to be exposed for an additional 4 weeks for a total of 13 weeks. Motor activity will be assessed for both the 9- and 13-week subgroups prior to the onset of exposures and following 4, 7, and 9 weeks of exposure. Rats in the 9-week subset will be assessed for motor activity on approximately 3 days in addition to the Saturday assessment (Sunday, Tuesday, and Friday) to determine the reversibility of the increase in motor activity if observed. The rats in the 13-week subset will also be assessed for motor activity after 11 and 13 weeks of exposure. If changes in activity are observed, an additional one or two assessments of motor activity will be conducted during the fourteenth week of the study. The specific time points would be based upon the 9-week findings. Exposures to isopropanol will not be conducted during the 14th week. Body weights and clinical signs will be assessed at intervals throughout the study. Rats will be killed and discarded without pathologic evaluation.

The portions of this study conducted at BRRC will be in compliance with the following guidelines and standards:

U.S. Environmental Protection Agency (EPA), Toxic Substances Control Act (TSCA) Good Laboratory Practice (GLP) Standards, 40 CFR Part 792.

U.S. Environmental Protection Agency (EPA), Toxic Substances Control Act (TSCA) Health Effects Testing Guidelines, 40 CFR Part 798, Subpart G, Section 798.6200.

PERSONNEL

All personnel who participate in the conduct of the study will be documented in the raw data.

PROJECT DATES

Proposed Starting Date of Acclimation	May 4, 1993
Proposed Starting Date of Test Substance Exposure	May 24, 1993
Proposed Date for Completion of In-Life Phase	August 20, 1993
Proposed Date for Submission of Draft Final Report	November 23, 1993

METHODS

Test Substance

Product Name	Isopropanol
Chemical Name	Isopropyl Alcohol
CAS Registry Number	67-63-0
Source	Union Carbide Corporation Texas City, Texas
Sponsor Identification Number	To be added by amendment.
BRRC Number	To be added by amendment.
Description	To be added by amendment.
Purity	To be added by amendment.
Stability	The test substance is considered to be stable at room temperature for the duration of the study.
Storage Conditions	The test substance will be stored under well-ventilated conditions at ambient temperature in an appropriate storage area.
Quantity	To be determined. After the assigned studies have been completed, all unused test substance will be returned to the Sponsor.
Reserve Sample	A reserve sample of approximately 5 to 10 g will be retained in an amber bottle with a Teflon-lined cap from each container of test substance used during the study. The reserve sample will be stored at ambient temperature for 10 years. Prior to discarding the reserve sample, the Sponsor will be contacted.
Safety	A Material Safety Data Sheet (MSDS) supplied by the Sponsor will be reviewed by all relevant personnel before their participation in the study. This review will be documented. Normal precautions for untested substances will be used. These procedures include the use of disposable Tyvek® or plastic coats or jumpsuits, hats, booties or shoe covers, and rubber gloves while in the animal rooms. Eye protection will include the use of safety glasses at all times. Disposable Tyvek® coats or smocks and gloves will be worn while working with the test substance or when

handling exposure carriers or animals immediately after exposure. In addition, monogoggles will be used when handling the test substance.

Test Animals

Species and Strain	Fischer 344 rats
Supplier	Harlan Sprague Dawley, Inc. Indianapolis, IN
Rationale	The Fischer 344 was selected because this strain was used in the previous isopropanol study conducted at BRRC.
Number and Sex	A total of 75 nulliparous and nonpregnant females will be ordered from which 60 will be selected for the study.
Age and Weight	The animals will be requested to be approximately 35 days of age on the scheduled animal receipt date. Exposures will begin when the animals are not more than 8 weeks old. Body weight range at first exposure will be stated in the report.
Acclimation and Pretest Evaluations	Shortly after their arrival at the laboratory, the animals will be transported to the room selected for the study. Once in the room, the animals will be removed from the shipping cartons and examined. All animals with evidence of disease or physical abnormalities will be discarded and the reason for rejection will be recorded. If an unusually large number of animals shows evidence of disease or physical abnormalities, the entire shipment of animals will be rejected for use in the study. A total of 5 females will be randomly selected for a pretest health screen as discussed below. Additional animals not selected for the study may be held for possible random serology testing. All remaining animals will be housed 2 to 3 to a cage for approximately the first week of acclimation. During the second week of acclimation, animals will be housed individually. During the acclimation period, animals will be fed the same diet that will be used during the study. Animals will be observed twice daily for any overt clinical signs of disease or abnormality. Individual detailed physical examinations will be conducted twice prior to the start of the study. Animals showing abnormalities deemed by the Study Director or other appropriate personnel to render the animal unacceptable for

placement on the study will be sacrificed and discarded on the day observed, and the reason for sacrifice will be recorded.

Animals will be weighed at least twice during the pretest period. Any animal whose weight gain during the acclimation period is not considered normal for this age and strain of rat, or whose absolute body weight at the last pretest weighing is outside ± 20% of the population mean, will not be used for the study.

Pretest Health Screen

A pretest health screen will be initiated within 2 days after the receipt of the animals. The pretest health screen will be performed on 5 females selected directly from the shipping cartons with as many cartons as possible being represented and will consist of examinations for fecal parasites, necropsy, and histopathologic evaluations of selected tissues (3 females). Serology testing for Sendai virus, rat coronavirus/sialodacryoadenitis virus, and Mycoplasma pulmonis will be performed approximately 2 weeks after receipt using animals not selected for the study. Results of the viral testing will be available prior to the start of the study.

The following organisms will be included in serologic testing conducted periodically throughout the facility:

Sendai virus (SEND)
Pneumonia virus of mice (PVM)
Rat coronavirus/Sialodacryoadenitis virus (RCV/SDA)
Kilham rat virus (KRV)
Toolan's H-1 virus (H-1)
Reovirus type 3 (REO3)
Mycoplasma pulmonis (MPUL)
Mouse polio virus (GD-7)
Lymphocytic choriomeningitis virus (LCMV)
Mouse adenovirus FL/K87 (MAD)
Minute virus of mice (MVM)
Polyoma virus (POLY)

Fecal examination for parasites will be conducted using a cellophane tape test as a prestudy screen and by zinc sulfate flotation from cecal contents obtained at necropsy.

Histopathology will consist of examination of at least the following tissues: liver, kidneys, trachea, lungs, heart, spleen, salivary glands, submandibular lymph nodes, and nasal cavities.

The purpose of this screen is to determine the suitability of the population of animals proposed for this study. Therefore, the results of this screen will be available to the Study Director before the study begins.

All rats will be examined by a veterinarian shortly after their arrival and again prior to study start. The dates of the examinations will be documented in the raw data.

Identification

Each animal will be assigned a unique identification number prior to the initiation of the study. Animals will be identified by a cage tag and tail tattoo. Animals sacrificed for use in the pretest health screen will be identified by cage tags only until sacrifice and then toe-clipped for further identification. Records will be kept documenting the fate of all animals received for the study.

Husbandry

Conditions

All animals will be housed in an appropriate animal room at BRRC from arrival until termination of the in-life phase of the study. Stainless steel cages with wire mesh floors will be used throughout all phases of the study. Cages will be changed and sanitized at least once every 2 weeks. DACB® (Deotized Animal Cage Board; Shepherd Specialty Papers, Inc.) will be changed at least 3 times each week.

Motor activity evaluations will be made in a modified Relocatable Containment System® (RCS) Unit (Hazleton Systems Inc.) or in a room designed for such evaluations. Both areas have been modified to control environmental fluctuations in sound, light, temperature, and relative humidity.

Temperature and humidity will be recorded continuously using automatic recorders. Illumination in the motor activity assessment room will be documented daily prior to conducting motor activity measurements. Rooms used in this study will be maintained at a temperature of 66-77°F and relative humidity at 40-70%. White noise levels of 59-62 dBA and room illumination of approximately 1.0 foot candle will be maintained during motor activity test sessions. The temperature and humidity will be checked by a technician at each room check and in the motor activity room on the day of assessments. A record will be kept indicating that this was done. The white noise level and illumination will also be checked at

each motor activity test session and a record will be kept indicating it was done. Appropriate corrective action will be taken whenever readings outside the specified limits are observed.

The accuracy of the temperature, humidity, and white noise level recording devices will be checked periodically and calibrated when necessary. The verification and calibration data will be recorded. Any time the continuous recording equipment is found to be malfunctioning, a new recorder will be placed in the animal room or the data in the animal room will be manually recorded at each room check.

An automatic timer will be set to provide fluorescent lighting for a 12-hour photoperiod (approximately 0500 to 1700 hours for the light phase). In the animal room, there will be at least 10 air changes each hour.

Diet

Ground, Certified Rodent Chow® #5002 (Purina Mills, Inc., PMI, Inc.) will be available ad libitum except during exposures and motor activity testing. The analyses of chemical composition and possible contaminants of each batch of diet will be performed by Purina Mills, Inc. (PMI, Inc.) and the results of these analyses will be reviewed by the Study Director.

Water

Tap water (Municipal Authority of Westmoreland County, Greensburg, PA) will be available ad libitum, except during exposures, by an automatic watering system with demand control valves mounted on each rack. Water pressure and function of the individual cage rack systems will be checked at each room check, and a record will be kept indicating it was done. Drinking water contaminant levels will be measured at regular intervals according to EPA specifications, to include the "priority" pollutants, and will comply with human drinking water requirements. The results of the analyses will be reviewed by the Study Director.

Administration of Test Substance

Route and Justification

The route of administration will be by inhalation. Inhalation is considered to be a meaningful way to evaluate the toxicity of chemicals with the use pattern of the test substance.

Target Exposure Concentration

One target exposure concentration of 5000 ppm isopropanol will be evaluated. One control group, exposed to filtered air only, will also be used in the study.

Duration of Exposure	Animals will be acclimated to the exposure chamber (mock exposure) for 2 days during the week prior to initiation of exposures. All of the animals on the study will be exposed daily, 6 hr/day, Monday through Friday (except holidays), for either 9 or 13 weeks.
Test Substance Analysis	Prior to the initiation of the study and following the study, a sample of the test substance will be drawn, and a compositional analysis will be performed by the Sponsor.
Exposure Chambers	Two stainless steel chambers with glass doors and windows for animal observation will be used. The total "volume" of the animals will not exceed 5% of the volume of the test chamber. Chambers will be provided with air at a flowrate of approximately 13-14 air changes each hour to ensure an adequate oxygen content of at least 19%. The rate of airflow will be monitored continuously and recorded approximately every 30 minutes. All chambers will be maintained at a slight negative pressure to prevent any test substance from entering the room containing the chambers. The temperature and relative humidity of the exposure chambers will be monitored continuously and recorded approximately 12 times during each exposure. If possible, temperature will be maintained at 22 ± 2°C, and relative humidity will be maintained between 40-60%. The oxygen content of the chambers will be monitored prior to the initiation of the study.
Vapor Generation	Isopropanol will be metered by a piston pump (Fluid Metering, Inc., Oyster Bay, NY) into a glass evaporator to produce the vapor. The vapor will be diluted to the desired concentration in the chamber with filtered chamber supply air. A description of the methods used for the generation will be provided in the raw data.
Vapor Analysis	Chamber concentrations of the test substance will be determined approximately once each hour by a flame ionization gas chromatographic (GC) technique. The details of the GC method will be described in the study report. The control chamber atmosphere will be analyzed at least once each exposure day. Chamber probes for sampling will be placed in the breathing zone of the animals. The daily nominal (estimated) chamber concentration will also be determined.

Chamber Distribution

The uniformity of isopropanol vapor concentration in the exposure chamber will be examined. The chamber will be tested prior to initiation of the study. For the distribution test, vapor concentration will be measured at 5 positions.

Study Design

Group Assignment

Based on the final pretest body weights, the animals will be selected for the study from the remaining population. These animals will be divided equally into 4 groups as defined below, based on body weight, using a computerized randomization procedure.

Following body weight measurement just prior to the first exposure day, statistical evaluation of the body weights and motor activity data for all groups will be conducted and statistical equivalence and homogeneity of variance will be examined. In the event that either criterion is not met, or if there are individuals with abnormal clinical signs, replacements will be made and the statistical criterion will be reevaluated.

Animals not selected for the study will remain housed in the study room until the study begins and will be used as replacements in the event that any of the selected animals dies prior to the start of the study. After exposures have begun, all animals not selected for the study will be sacrificed and no further replacement of animals will be made.

Organization

Group	Number of Females 9 week	Number of Females 13 week	Test Substance Concentration[1] (ppm)
Control	15	15	0
High	15	15	5000

[1]Administered 6 hr/day.

Experimental Evaluations

Mortality Checks and Clinical Signs

All animals assigned to the study will be observed for mortality and clinical signs of overt toxicity twice each day, 7 days each week. On exposure days, the animals will be observed just prior to exposure and shortly following the exposure. On weekends and holidays, the first daily check will generally be conducted before 9:00 a.m. and the second after noon. Animals will also be generally observed while in the exposure chambers. Observed mortality and/or signs of toxicity will be recorded on the day observed.

Detailed Physical Examinations

During each study week, a detailed physical examination of each animal will be performed. These examinations will include, but not necessarily be limited to, an external physical examination, gentle palpation of internal organs, and an assessment for abnormal behavior or clinical signs. Findings, or lack thereof, will be recorded for each individual animal.

Sacrifice of Distressed Animals

If any animal shows signs of extreme distress or is moribund, it will be sacrificed for humane reasons before the scheduled date. The Sponsor will be notified as soon as possible if it is anticipated that the sacrifice may affect the integrity of the study.

Body Weight

Individual body weights will be measured and recorded weekly. Individual animal body weight gain will also be calculated.

Motor Activity

Motor activity testing will be performed for all rats on study using an automated recording apparatus designed to measure activity (San Diego Instruments Inc.). Motor activity evaluations will be conducted before exposures are initiated, on Saturday following weeks 4, 7, and 9 for all rats. For rats in the 9-week subset, assessments will also be conducted on the Sunday, Tuesday, and Friday after Week 9 if necessary to evaluate reversibility of motor activity effects. The 13-week subset will also be tested on the Saturday after 11 and 13 weeks of exposure. Two additional days of testing will be conducted (Sunday and Tuesday after Week 13) if reversibility is an issue. The animals will be tested in 2 blocks: the 9-week subset and the 13-week subset. In each block, rats will be equally distributed with respect to exposure group and recording device to limit experimental bias. Each test session will be 90 minutes in duration.

Disposition of Animals

Animals that survive until the conclusion of the study will be euthanized by carbon dioxide asphyxiation and discarded without pathologic evaluation. Animals that are found dead or sacrificed moribund will be given a complete necropsy. Tissues will not be saved unless deemed necessary by the Study Director or their designee.

Statistical Evaluations

The data for quantitative continuous variables will be intercompared for the exposed and control groups by Levene's test for equality of variances and t-tests.

A nested analysis of motor activity data will be performed using a repeated-measures analysis with exposure as a grouping factor and test period and intrasession interval as within-subject factors. Significant interactions between exposure and study week or among exposure, study week, and intrasession interval will lead to additional repeated-measures analysis of data collected at individual testing intervals with exposure as grouping factor and intrasession as within-subject factor. The epsilon-adjustment procedure (Greenhouse-Geisser correction) will be used in repeated-measures analysis of motor activity data. Additional exposure group comparisons of total cumulative test session activity will be performed at each testing interval. Total cumulative test session activity for each testing interval will also be evaluated.

Statistical analyses will be performed using either BMDP Statistical Software or other statistical programs, as deemed appropriate. For all statistical tests the probability value of < 0.05 (2-tailed) will be used as the critical level of significance.

ALTERATION OF PROTOCOL

Alterations to this protocol may be made as the study progresses. No changes in the protocol will be made without the specific written request or consent of the Sponsor. In the event that the Sponsor authorizes a protocol change verbally, such change will be honored. However, it then becomes the responsibility of the Sponsor to follow such verbal change with a written verification. BRRC reserves the right to revise the protocol or deviate therefrom solely at the discretion of the Study Director if prior approval of the Sponsor cannot be obtained and the integrity of the study is considered in jeopardy. In this event, the Sponsor will be notified of the alteration as soon as possible, and documentation of the change will be the responsibility of the Study Director.

RETENTION OF RECORDS

All raw data, documentation, the protocol and any amendments, specimens, and a copy of the final report generated as a result of this study will be retained in the BRRC Archives for at least 10 years. A reserve sample of test substance from each container used during the study will also be stored in the BRRC Archives.

Following the retention period specified above, the Sponsor will be contacted and given the option of taking receipt, destroying, or arranging for other storage of the data and materials. All data and materials mentioned above will remain the sole property of the Sponsor and can be removed from BRRC at the Sponsor's discretion.

REPORTS

Draft Final Report

An unaudited draft of the final report will be submitted to the Sponsor approximately 3 months after the completion of the terminal sacrifice. This report will be a comprehensive report which will include all information necessary to provide a complete and accurate description and evaluation of the test procedures and results. It will include: a summary; appropriate text discussions of the experimental design, materials and methods, and results; and summary mean or incidence tables of in-life data. In addition, it will contain appendices with individual animal data and other pertinent information as included in Attachment 1.

Final Report

The draft final report will be reviewed by the Sponsor, and comments on the report will be provided to BRRC within 8 weeks from the date of submission of the draft version. BRRC will consider these comments in preparing the final report. Assuming the Sponsor's comments are received at the specified time and no major revisions are required, BRRC will submit a final report within 12 weeks of issuance of the draft report.

The final report will be audited by the Quality Assurance Unit and contain a signed quality assurance statement. It will conform to the formatting specifications of EPA PR notice 86-5.

ANIMAL USE POLICY

It is the goal of BRRC, through the establishment and activities of the Institutional Animal Care and Use Committee, to comply with the U.S. Animal Welfare Act and the subsequent rules promulgated by the U.S. Department of Agriculture and in effect on the date of this protocol. It has been determined that the work described herein minimizes the number of animals used, is necessary, and uses the most appropriate species and strain in order to provide meaningful results and the most useful information for comparative purposes relative to previous studies. Furthermore, this study will be conducted humanely, and to the best of our knowledge, neither unnecessarily duplicates any previous work, nor can it be accomplished using currently available, validated nonanimal models.

GOOD LABORATORY PRACTICE COMPLIANCE

BRRC, through the administration of a quality assurance program by the Good Laboratory Practice Committee and Quality Assurance Unit, assures compliance of all phases of studies conducted at BRRC with existing regulations and generally accepted good laboratory practices.

The study will be subjected to periodic inspections and the final report will be reviewed by the BRRC Quality Assurance Unit.

REFERENCES

Burleigh-Flayer, H. D., Chun, J. S., and W. J. Kintigh (1991). Isopropanol Fourteen Week Inhalation Study in Mice and Rats with Neurotoxicity Evaluations in Rats. BRRC Report 53-589, Bushy Run Research Center, Union Carbide Corporation, Export, PA.

REPORT TABLES

The following tables will be included in the main section of the final report for females.

Summary of Clinical Observations
Summary of Body Weight (Grams)
Summary of Body Weight Gain (Grams)
Summary of Motor Activity Data

In addition, where appropriate and necessary for interpretation of the results of the study, figures will be included for body weight, clinical observations, and motor activity.

The following appendices will be included as supporting documentation to the final report.

Analytical Chemistry Report
Individual Clinical Observation Data
Individual Animal Fate Data
Individual Body Weight Data
Individual Animal Motor Activity Data
Protocol and Protocol Amendment

UNION CARBIDE

BUSHY RUN RESEARCH CENTER

6702 Mellon Road, Export, Pennsylvania 15632-8902

Telephone (412) 733-5200
Telecopier (412) 733-4804

PROTOCOL AMENDMENT 1

TITLE: Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

BRRC PROJECT ID: 93N1245

SPONSOR:
Isopropanol Panel
Chemical Manufacturers Association
2501 M Street, NW
Washington, DC 20037

TESTING FACILITY:
Bushy Run Research Center (BRRC)
Union Carbide Chemicals
and Plastics Company Inc.
6702 Mellon Road
Export, PA 15632-8902

Reviewed and Approved by:

Bushy Run Research Center:

Heather D. Burleigh-Flayer 8/2/93
Heather D. Burleigh-Flayer, Ph.D. Date
Study Director

James D. Sun 8/2/93
James D. Sun, Ph.D. Date
Associate Director

Linda J. Caliati 8/5/93
Linda J. Caliati, B.S. Date
Manager, Good Laboratory
Practices/Quality Assurance

John P. Van Miller 8/5/93
John P. Van Miller, Ph.D., DABT Date
Director

Sponsor's Representative:

Cecilia W. Spearing 8/10/93
Cecilia W. Spearing Date
Manager, Isopropanol Panel

The protocol is amended as follows:

Item 1

Location of Protocol Change	Page 1, Reviewed and Approved by
Description of Protocol Change	Heather D. Burleigh-Flayer assumed the responsibilities of Study Director as of August 1, 1993.
Rationale	The Study Director changed due to the departure of Cynthia D. Driscoll from BRRC.

Item 2

Location of Protocol Change	Page 1, Reviewed and Approved by
Description of Protocol Change	James D. Sun was added as a signatory and Edward H. Fowler was removed as a signatory for this study.
Rationale	Due to a change in the Study Director, the signatories were changed.

UNION CARBIDE

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PROTOCOL AMENDMENT 2

TITLE: Isopropanol: Ninety-Day Vapor Inhalation Neurotoxicity Study in Female Fischer 344 Rats

BRRC PROJECT ID: 93N1245

SPONSOR:

Isopropanol Panel
Chemical Manufacturers Association
2501 M Street, NW
Washington, DC 20037

TESTING FACILITY:

Bushy Run Research Center (BRRC)
Union Carbide Chemicals
and Plastics Company Inc.
6702 Mellon Road
Export, PA 15632-8902

Reviewed and Approved by:

Bushy Run Research Center:

Heather D. Burleigh-Flayer 11/2/93
Heather D. Burleigh-Flayer, Ph.D. Date
Study Director

11-3-93
James D. Sun, Ph.D. Date
Associate Director

11/5/93
Linda J. Calisti, B.S. Date
Manager, Good Laboratory
Practices/Quality Assurance

11/16/93
John P. Van Miller, Ph.D., DABT Date
Director

Sponsor's Representative:

11/22/93
Cecilia W. Spearing Date
Manager, Isopropanol Panel

The protocol is amended as follows:

Item 1

Location of Protocol Addition	Page 3, Test Substance
Description of Protocol Addition	Sponsor Identification Number: TX-1543; 04-15-93; Supplier ID 662329; Container ID TX1300K99 BRRC Number: 56-127 A and B Description: Colorless liquid Purity: 99.98%
Rationale	This information was to be added by amendment.

Item 2

Location of Protocol Change	Page 2, Design and Basis for the Study and Page 10, Motor Activity
Description of Protocol Change	In order to evaluate reversibility, motor activity testing was performed on the Sunday, Tuesday, and Friday following Weeks 9 and 13 for the rats in the 9-week subset and the 13-week subset, respectively. Additional motor activity testing was also performed for the 13-week subset of animals. The additional testing occurred 14, 21, 28, 35, and 42 days following their last exposure.
Rationale	Additional motor activity testing was requested by the Sponsor to evaluate reversibility since motor activity effects were observed.

Item 3

Location of Protocol Change	Page 2, Project Dates	
Description of Protocol Change	Proposed Date for Completion of In-Life Phase	October 5, 1993
	Proposed Date for Submission of Draft Final Report	January 31, 1994
Rationale	Due to the additional motor activity measurements, the in-life phase was extended and, subsequently, the date for submission of the draft report was changed.	

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PROTOCOL DEVIATIONS

The following deviations were made from the written protocol.

1. During the acclimation period, while the animals were in study order, no documentation was made that all animals not selected for the study were observed for overt signs from 5/19/1993 to 5/22/93.

2. On the weekend days, animals were normally observed for overt signs of toxicity once each day and mortality twice each day. Computer documentation of observation for overt signs of toxicity cannot be located for 7/3/93, 7/17/93, 7/18/93, 9/18/93, 9/19/93, and 10/4/93. Dead checks were performed only once on 9/3/93, 9/18/93, and 9/19/93.

3. Documentation of the review of the Material Safety Data Sheet was not made for all personnel involved in the study. These people had limited involvement in the study and had reviewed the MSDS during other inhalation studies conducted at this laboratory using the test substance or worked under the supervision of other personnel who had reviewed the MSDS.

4. The temperature and humidity chart for the final week of the study (9/28/93 to 10/5/93) cannot be located. No deviations from the ranges specified by the protocol were recorded by study personnel at any dead check and no temperature or humidity alarms were reported by maintenance personnel. Based on the stability of the temperature and humidity readings for the rest of the study, no deviations from specified ranges are expected to have occurred.

5. Chamber concentrations of the test substance were determined approximately twice each hour, not once each hour as specified in the protocol.