SECOND AMENDED FINAL REPORT

Study Title

In Vivo-In Vitro Rat Peripheral Lymphocyte Sister Chromatid Exchange Assay

Test Substance

Gasoline Ethanol Vapor Condensate

Author

Ramadevi Gudi, Ph.D.

Study Completion Date

August 28, 2008

Amended Final Report Date

26 June, 2009

Second Amended Final Report Date

29 September, 2009

Performing Laboratory

BioReliance
9630 Medical Center Drive
Rockville, Maryland 20850

Laboratory Study Number

AA40NW.130.BTL

Subcontractor's Sponsor Project Number

00-6127

Subcontractor's Sponsor

Huntingdon Life Sciences
Princeton Research Center (PRC)
Mettlers Road
East Millstone, New Jersey 08875-2360

FINAL REPORT AMENDMENT

Subcontractor's Sponsor:	**Huntingdon Life Sciences**
Test Article I.D.:	**Gasoline Ethanol Vapor Condensate**
BioReliance Study No.:	**AA40NW.130.BTL**
Subcontractor's Sponsor Project I.D.:	**00-6127**
Date of Final Report:	**August 28, 2008**
Protocol Title:	**In Vivo-In Vitro Rat Peripheral Lymphocyte Sister Chromatid Exchange Assay**

1. **Part of final report to be amended:** Page 9, Paragraph 4

   Amendment: Changed the last two sentences as follows:

   No statistically significant increases in SCE frequency were observed in males or females in any of the Gasoline Ethanol Vapor Condensate exposure groups.

   Reason for the amendment: To correct the error in the final report.

2. **Part of final report to be amended:** Page 13, Paragraph 4

   Amendment: Changed sentences 9 and 10 as follows:

   No statistically significant increase in average SCE frequency was observed in males or females in any groups exposed to Gasoline Ethanol Vapor Condensate.

   Reason for the amendment: To correct the error in the final report.

APPROVALS:

Ramadevi Gudi — 26 June 2009

Ramadevi Gudi, Ph.D.
Principal Investigator
BioReliance

Date

Allison Schafer — 26 June 2009

Quality Assurance Unit

Date

FINAL REPORT AMENDMENT 2

Subcontractor's Sponsor:	**Huntingdon Life Sciences**
Test Article I.D.:	**Gasoline Ethanol Vapor Condensate**
BioReliance Study No.:	**AA40NW.130.BTL**
Subcontractor's Sponsor Project I.D.:	**00-6127**
Date of Final Report:	**August 28, 2008**
Protocol Title:	**In Vivo-In Vitro Rat Peripheral Lymphocyte Sister Chromatid Exchange Assay**

1. **Part of final report to be amended:** Page 10, Section Sister Chromatid Exchange Assay, Second sentence.

   Amendment: Correct the second sentence to: Animals were anesthetized with isoflurane by inhalation exposure.

   Reason for the amendment: To correct the error in the final report.

APPROVALS:

Ramadevi Gudi — 29 Sept 2009

Ramadevi Gudi, Ph.D.
Principal Investigator
BioReliance

Date

Quality Assurance Unit — 29 Sep 2009

Date

STATEMENT OF COMPLIANCE

The Sister Chromatid Exchange BioReliance Study No. AA40NW.130.BTL was conducted in compliance with 79.60, CFR Vol. 59, No. 122, 27 June 1994. This study was performed according to protocol and BioReliance's Standard Operating Procedure for Sister Chromatid Exchange Assay with the following exceptions:

> The identity, strength, purity and composition or other characteristics to define the positive control article has not been determined by the testing facility. The positive control article has been characterized as per the Certificate of Analysis on file with the testing facility.
>
> The stability of the positive control article has not been determined by the testing facility.
>
> Analyses to determine the uniformity (as applicable) or concentration of the positive control mixture were not performed by the testing facility.
>
> The stability of the positive control article mixture has not been determined by the testing facility.

Ramadevi Gudi — 29 Sept 2009

Ramadevi Gudi, Ph.D. — Date
Principal Investigator
BioReliance

27 Jan 10

Gary M. Hoffman, B.A., D.A.B.T. — Date
Study Director
Huntingdon Life Sciences

Quality Assurance Statement

Study Title: IN VIVO-IN VITRO RAT PERIPHERAL LYMPHOCYTE SISTER CHROMATID EXCHANGE ASSAY

Study Number: AA40NW.130.BTL

Principal Investigator: Ramadevi Gudi, Ph.D.

Study Director: Gary Hoffman

Quality Assurance performed the inspections listed below for this study. Verification of the study protocol was also performed and documented by QA. Procedures, documentation, equipment records, etc., were examined in order to assure that the study was performed in accordance with the U.S. EPA Good Laboratory Practice Regulations (79.60, CFR Vol. 59, No. 122, 27 June 1994), and to assure that the study was conducted according to the protocol and relevant Standard Operating Procedures.

The following are the inspection dates, phases inspected, and report dates of QA inspections of this study.

Inspect On: 24-May-01 - 24-May-01 To Study Dir 24-May-01 To Mgmt 08-Nov-01
Phase: Preparation of slides

Inspect On: 29-Oct-01 - 01-Nov-01 To Study Dir 01-Nov-01 To Mgmt 08-Nov-01
Phase: Draft Report

Inspect On: 28-Aug-08 - 28-Aug-08 To Study Dir 28-Aug-08 To Mgmt 28-Aug-08
Phase: Draft to Final Report

Inspect On: 23-Jun-09 - 23-Jun-09 To Study Dir 23-Jun-09 To Mgmt 26-Jun-09
Phase: Amended Final Report

Inspect On: 28-Sep-09 - 28-Sep-09 To Study Dir 28-Sep-09 To Mgmt 29-Sep-09
Phase: Amended Final Report

This report describes the methods and procedures used in the study and the reported results accurately reflect the raw data of the study.

Lula Aberra-Degu

Lula Aberra Degu, BS
QUALITY ASSURANCE

29 Sep 2009
DATE

TESTING FACILITY'S QUALITY ASSURANCE STATEMENT

Listed below are the dates that this study was inspected by the Quality Assurance Unit of Huntingdon Life Sciences, East Millstone, New Jersey, and the dates that findings were reported to the Study Director and Management. This report reflects the raw data as far as can be reasonably established.

Type of Inspection	Date(s) of Inspection	Reported to Study Director and Management
General Facility Inspection	8 Nov 00	11 Nov 00[a]
GLP Protocol Review	1 & 2 Feb 01	8 Feb 01
Exposure Monitoring & Equipment Records	17 Apr 01	20 Apr 01
GC Characterization	24 Apr 01	26 Apr 01
Positive Control Genotoxicity Dose Administration	16 May 01	17 May 01
Blood Collection & Necropsy (Genotox Animals) & Training Records	17 May 01	21 May 01

Fran Jannone

Fran Jannone, B.A., RQAP-GLP
Quality Assurance Group Leader

26 Jan 10
Date

[a]Date reported to facility management.

SIGNATURE PAGE

SCIENTIST

The following Scientist was responsible for the overall conduct of this study:

Ramadevi Gudi — 29 Sept 2009

Ramadevi Gudi, Ph.D.
Principal Investigator
BioReliance

Date

SCIENTIFIC REVIEW

The following Scientists have reviewed and approved this report:

Study Management
BioReliance

9/29/09
Date

Gary M. Hoffman, B.A., DABT
Study Director
Huntingdon Life Sciences Limited

27 Jan 10
Date

In Vivo-In Vitro Rat Peripheral Lymphocyte Sister Chromatid Exchange Assay

FINAL REPORT

Subcontractor's Sponsor:	**Huntingdon Life Sciences** **Princeton Research Center (PRC)** **Mettlers Road** **East Millstone, New Jersey 08875-2360**
Study Director:	**Gary Hoffman, B.A., DABT**
Performing Laboratory:	**BioReliance** **9630 Medical Center Drive** **Rockville, Maryland 20850**
Test Substance I.D.:	**Gasoline Ethanol Vapor Condensate**
Sponsor Project Number:	**00-6127**
BioReliance Study No.:	**AA40NW.130.BTL**
Experimental Start Date for SCE:	**May 17, 2001**
Experimental Completion Date for SCE:	**June 23, 2001**

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SUMMARY

The test substance, Gasoline Ethanol Vapor Condensate, was tested in the rat peripheral lymphocyte sister chromatid exchange (SCE) assay following inhalation exposure of rats.

Information on test system, experimental design and methodology will be provided by Huntingdon Life Sciences. All in vivo portions of the study, including inhalation exposures were performed by Huntingdon Life Sciences.

Rats were exposed by inhalation to negative (air) control, 2,000; 10,000 and 20,000 mg/m^3 of Gasoline Ethanol Vapor Condensate for 4 weeks (5 days exposure per week). One additional group of animals (5 males and 5 females) was dosed with 5 mg/kg of cyclophosphamide (CP, positive control) by intraperitoneal injection 24 hours prior to blood collection. BioReliance personnel collected rat blood samples at 24 hours after the end of a 4 week (5 days per week) exposure period. Rat blood samples were cultured and processed for the SCE assay in a BioReliance facility.

A minimum of 25 second division metaphases per animal were scored for SCEs. At least 100 consecutive metaphases per animal were scored for the number of cells in first-, second-, or third-division metaphase for each animal as an indictor of toxicity (cell cycle delay). At least 1000 cells were scored for mitotic index per animal. A one-tailed Dunnett's t test for multiple comparisons was performed to compare the average SCE frequency of test exposure levels to the negative control frequency. No statistically significant increases in SCE frequency were observed in males or females in any of the Gasoline Ethanol Vapor Condensate exposure groups.

Based on the findings of this study, the test substance, Gasoline Ethanol Vapor Condensate, was concluded to be negative for the induction of sister chromatid exchanges in rat peripheral lymphocytes.

PURPOSE

The purpose of this study was to evaluate the potential of Gasoline Ethanol Vapor Condensate to induce SCEs in rat peripheral lymphocytes following inhalation exposures.

CHARACTERIZATION OF TEST AND CONTROL SUBSTANCES

Information regarding test substance and negative control and their characterizations will be provided by Huntingdon Life Sciences.

Cyclophosphamide (CP, CAS # 6055-19-2, lot number 108H0568, expiration 30 June 2001, white powder, storage 2-8°C, purity 99.2%), was obtained from the Sigma Chemical Company, St. Louis, MO (responsible for its characterization). CP was shipped from BioReliance on 14 May 2001, received at Huntingdon Life Sciences on 15 May 2001 and dissolved and diluted in sterile distilled water at Huntingdon Life Sciences to stock concentrations of 0.5 mg/mL for use as the positive control for SCE study.

MATERIALS AND METHODS

Test System

Information on the test system will be provided by Huntingdon Life Sciences.

Sister Chromatid Exchange Assay

Peripheral blood lymphocytes were obtained from Sprague-Dawley rats that were exposed with negative (air) control, 2000, 10,000 and 20,000 mg/m^3 of Gasoline Vapor Condensate or positive control (5 mg/kg of CP injected IP at 10 mL/kg, 24 hours prior to sacrifice). Animals were anesthetized with isoflurane by inhalation exposure. Blood samples were collected into sodium heparin tubes from the abdominal aorta by BioReliance personnel on site at Huntingdon Life Sciences. The blood samples were transported to BioReliance on the day of collection on ice packs

Cell Culture and Collection of Metaphase Cells

Within 24 hours after blood collection, the whole blood samples were cultured in duplicates per animal in RPMI 1640 culture medium with 25 mM Hepes buffer supplemented, 10% fetal bovine serum, antibiotics (pencillin G, 100 u/ml and streptomycin sulfate, 0.1 mg/mL), 20 μg/mL phytohemagglutinin and an additional 2 mM L-glutamine. Cultures were initiated by inoculating 0.5 mL of whole blood per 5 mL of complete medium in T-25 sterile disposable tissue culture flasks and incubated at 37°C. Approximately 21 hours after initiation of the cultures, the cells were exposed to 5 μg/mL of bromodeoxyuridine (BrdU, Sigma Co., St. Louis, MO). At approximately 68 hours, 0.2 μg/mL of colcemid was added to each flask and incubated for approximately 4 hours. At

approximately 72 hours, the cells were collected by centrifugation at approximately 1200 rpm for about 5 minutes. The cell pellet was resuspended in 5 mL 0.075 M KCl and incubated at 37±1°C for 20 minutes. At the end of the KCl treatment and immediately prior to centrifuging, the cells were gently mixed and approximately 0.5 mL of fixative (methanol:glacial acetic acid, 3:1 v/v) was added to each tube. The cells were collected by centrifugation, the supernatant aspirated, and the cells were fixed with two washes with approximately 3-5 mL of fixative and stored in fixative overnight or longer at approximately 2-8°C.

Slide Preparation

To prepare slides, the fixed cells were centrifuged at approximately 1200 rpm for 5 minutes, the supernatant was aspirated, and the cells were resuspended in 1 mL fresh fixative. The cells were collected by centrifugation and the supernatant aspirated, leaving 0.1 to 0.3 mL fixative above the cell pellet. One to two drops of the cell suspension was dropped onto a glass slide and allowed to air dry overnight. Slides were identified by the study number, animal number, replicate tube designation and date prepared. The dried slides were stained.

Slide Staining

The slides were stained by using a modified flourescence-plus-Giemsa technique. Hoechst 33258 stain, 5 μg/mL, was prepared fresh by diluting 40 mL of Hoechst 33258 stock stain 50 μg/mL in distilled water, with 360 mL phosphate buffer, pH 6.8. The slides were stained in Hoechst, 5μg/mL, for 10 minutes, rinsed in deionized water and dried between sheets of bibulous paper. Three drops of phosphate buffer was placed on each slide and the buffer covered with a coverslip. The slides were then placed on a slide warmer maintained at approximately 60°C ± 2°C and covered with a "Black Ray" lamp with 15 watt tubes for 4-6 minutes. The coverslips will then be removed, the slides rinsed in deionized water and counterstained with 5% Giemsa solution (freshly prepared by diluting 20 mL Giemsa in 380 mL deionized water) for 6-10 minutes. The slides were rinsed in deionized water and left to air dry.

Evaluation of SCEs

Slides were coded using random numbers by an individual not involved with the scoring process. Metaphase cells were examined under oil immersion without prior knowledge of treatment groups. Whenever possible, a minimum of 25 second division metaphases per animal were scored for SCEs. At least 100 consecutive metaphase cells were scored for the number of cells in first-, second- or third-division metaphase for each animal as an indicator of toxicity (cell cycle delay) (BioReliance SOP# OPGT0442 and OPGT0336). At least 1000 cells were scored for mitotic index per animal.

Evaluation of Test Results

The number of SCEs per second-division metaphase cell were presented for each group along with the range of SCEs/metaphase for animals within a group. SCE frequencies as the grand mean ± standard deviation were presented for each group. The Average Generation

Time (AGT) is estimated as: = Number of hours in BrdU X 100/ (number M_1 cells x 1)+(number M_2 cells x 2)+(number M_3 cells x 3)]. A regression analysis (trend analysis) and a one-tailed Dunnett's t test for multiple comparisons was performed to compare the SCE frequency of test exposure levels to the negative control frequency, and if $p \leq 0.05$, that exposure level was considered significant. The conclusion of the study was based on the Principal Investigator's evaluation of all the data, including the biological as well as statistical significance. The following criteria were used as guidelines in evaluation of this study:

The test substance was considered positive if an exposure-level response and statistically significant increase is observed over a minimum of two exposure levels. A statistically significant increase at the high exposure level with an exposure-level responsive although not statistically significant increase at lower exposure levels was assessed as suspect. A statistically significant increase at one or more exposure levels with no evidence of a exposure level response was assessed as equivocal or as negative according to the magnitude of the response and the number of exposure levels affected.

Criteria for Determination of a Valid Test

The mean SCEs/cell/animal for the positive control animals must be statistically increased relative to the negative control.

Deviations

No known deviations from the protocol or assay-method SOPs occurred during the conduct of this study.

Archives

All raw data, the protocol and all reports generated at BioReliance will be maintained according to Standard Operating Procedure OPQP3040 by the BioReliance RAQA unit headquartered at: BioReliance, 14920 Broschart Road, Rockville, MD 20850. After submission of the final report, all of the above will be shipped to Huntingdon Life Sciences to be archived. All study materials returned to Huntingdon Life Sciences will first be copied and the copy will be retained in the BioReliance archives for a minimum of 10 years. All specimens, such as microscope slides, will be held in storage as long as the quality affords evaluation at BioReliance until the final report is issued in accordance with the relevant Good Laboratory Practice Regulations.

RESULTS AND DISCUSSION

Sister chromatid exchanges involve a symmetrical exchange at one locus, between sister chromatids of the chromosomes. Giemsa method for the differential staining of sister chromatids by Perry and Wolff (1974a) Wolff and Perry (1974) have made it possible to distinguish between sister chromatids. These techniques involve exposing cells to 5-bromodeoxyuridine (BrdU) for at least 2 rounds of replication so that M2 chromosomes consist of one chromatid unifilarly substituted with BrdU and the other bifilarly substituted. The chromatids of such chromosomes stain differentially with Giemsa stain. The observed SCE represents a recombination between DNA helices in the replicating chromosomes and

used as a sensitive cytological end point which correlates with DNA damage. The test substance, Gasoline Ethanol Vapor Condensate, was tested in the rat peripheral lymphocyte sister chromatid exchange (SCE) assay following inhalation exposure of rats.

Information on test system, experimental design and methodology will be provided by Huntingdon Life Sciences. All in vivo portions of the study, including inhalation exposures, were performed by Huntingdon Life Sciences.

Rats were exposed by inhalation to negative (air) control, 2,000; 10,000 and 20,000 mg/m^3 of Gasoline Ethanol Vapor Condensate for 4 weeks (5 days exposure per week). One additional group of animals (5 males and 5 females) was dosed with 5 mg/kg of cyclophosphamide (CP, positive control) by intraperitoneal injection 24 hours prior to blood collection. BioReliance personnel collected rat blood samples at 24 hours after the end of a 4 week (5 days per week) exposure period. Rat blood samples were cultured and processed for the SCE assay in a BioReliance facility.

A minimum of 25 second division metaphases per animal were scored for SCEs. At least 100 consecutive metaphases per animal were scored for the number of cells in first-, second-, or third-division metaphase for each animal as an indictor of toxicity (cell cycle delay). At least 1000 cells were scored for mitotic index per animal. The number of SCEs per second-division metaphase cell were presented for each animal (both males and females) in Tables 1 to 5. The number of M1, M2 and M3 cells out of 100 metaphases and the mitotic index out of 1000 cells per animal are also presented in Tables 1 to 5. The range and the average SCEs per animal and the SCE frequencies as the grand mean±standard deviation per group for males are presented in Table 6 and for females in Table 7. The Average Generation Time (AGT) and the mitotic index per group for males are presented in Table 6 and for females in Table 7. A one-tailed Dunnett's t test for multiple comparisons was performed to compare the average SCE frequency of test exposure levels to the negative control frequency. No statistically significant increase in average SCE frequency was observed in males or females in any groups exposed to Gasoline Ethanol Vapor Condensate. The positive control group (5 mg/kg) induced statistically significant increases in SCE frequency in both males and females. Regression analysis (trend analysis) was negative for a dose response in both males and females. No appreciable increase in AGT was observed in the test substance groups and the positive control group. No appreciable difference was observed in mitotic index in the test substance groups relative to the negative control group.

CONCLUSION

The positive control fulfilled the requirements for a valid test.

Under the conditions of the assay described in this report, based on the findings of this study, the test substance, Gasoline Ethanol Vapor Condensate, was concluded to be negative for the induction of sister chromatid exchanges in rat peripheral lymphocytes.

REFERENCES

Evans, H.J. (1976) Cytological methods for detecting chemical mutagens, in: A. Hollaender (Ed.), Chemical Mutagens, Principles and Methods for their Detection, vol. 4. Plenum Press, New York, NY.

MINITAB User's guide 2: data Analysis and Quality Tools, Release 12 for Windows® 95 WndowsNT™ February 1998 Chapter 3: Analysis of Variance, 3-1 to3-7.

Perry P. and Wolff S. (1974a) New Giemsa method for the differential staining of sister chromatid, Nature (London) 251, 156-158

Wolff S. and Perry P. (1974) Differential Giemsa staining of sister chromatid and the study of sister chromatid exchanges without autoradiography. Chromosoma 48, 341-353

TABLE 1

Number of Sister Chromatid Exchanges per cell in Negative Air Control Group
Air only
Male and Female Rats

Number of SCE's from Second Division Metaphases										
Animal Number[1]										
Cell No.	1031	1032	1033	1034	1035	1541	1542	1543	1544	1545
1	7	5	6	3	5	5	9	5	6	6
2	8	7	7	5	5	8	8	6	5	6
3	6	6	7	7	6	6	7	5	4	6
4	5	5	6	6	7	5	6	6	8	7
5	6	7	8	7	6	6	6	6	4	8
6	6	6	6	6	6	7	6	7	5	9
7	6	7	5	7	7	6	6	4	6	6
8	5	6	5	6	8	6	7	6	4	7
9	6	6	6	8	8	5	6	8	8	5
10	6	5	6	6	6	4	8	6	7	6
11	6	8	7	5	5	8	9	5	6	5
12	6	6	8	2	6	5	6	8	5	6
13	7	8	8	5	6	6	6	6	5	7
14	6	6	9	6	7	6	7	9	4	8
15	8	5	6	6	6	6	6	6	8	6
16	9	4	5	6	6	7	8	5	6	7
17	10	5	7	7	5	8	6	6	5	5
18	6	5	6	6	5	6	6	6	4	6
19	5	5	5	6	4	7	7	8	6	5
20	6	6	4	6	5	7	8	7	8	4
21	5	7	5	7	6	6	9	6	4	7
22	6	8	6	6	6	5	6	5	5	5
23	6	6	7	5	5	6	6	4	7	6
24	5	7	9	5	6	7	7	5	6	7
25	8	6	5	5	5	4	6	6	5	7
# M1 Cells[2]	36	43	33	37	35	33	44	36	38	40
# M2 Cells[2]	30	30	41	33	35	36	30	30	40	33
# M3 Cells[2]	34	27	26	30	30	31	26	34	22	27
Mitotic Index[3]	2.8	2.3	3.1	2.0	3.0	2.8	4.1	5.6	3.0	5.0

[1] Animal numbers 1031-1035 are males and 1541-1545 are females.

[2] Number of M1, M2 and M3 cells are obtained from 100 metaphases.

[3] MI = mitotic index; number mitotic figures x 100/1000 cells counted/animal.

TABLE 2

Number of Sister Chromatid Exchanges per cell at 2000 mg/m^3 of Gasoline Ethanol Vapor Condensate Male and Female Rats

Number of SCE's from Second Division Metaphases										
Animal Number[1]										
Cell No.	2021	2022	2023	2024	2025	2531	2532	2533	2534	2535
1	6	5	6	7	2	5	10	6	10	5
2	5	4	5	6	6	2	9	6	9	5
3	4	6	4	5	7	5	7	4	6	4
4	5	5	5	4	6	6	6	5	8	5
5	5	5	6	7	5	4	7	6	4	6
6	6	4	6	6	4	8	8	6	5	3
7	5	6	5	5	4	6	5	5	6	5
8	6	7	4	5	6	7	6	6	8	4
9	7	8	6	6	7	4	4	5	9	6
10	5	5	7	5	4	5	3	6	7	7
11	5	5	6	5	4	9	5	6	6	6
12	4	6	5	6	4	10	5	6	4	5
13	5	5	5	5	5	6	6	7	4	6
14	6	6	6	6	4	8	6	6	4	5
15	6	7	6	6	6	5	7	8	6	6
16	4	6	7	7	7	4	4	6	5	5
17	5	8	6	6	4	5	5	7	5	5
18	6	6	7	5	7	4	6	5	6	7
19	8	4	6	4	7	5	5	5	5	6
20	9	5	7	4	6	6	7	6	4	5
21	6	6	7	5	5	5	6	6	7	4
22	6	6	6	6	4	4	5	4	6	7
23	5	7	5	5	6	5	5	5	5	6
24	7	6	4	5	5	5	7	7	4	4
25	4	5	4	4	4	6	6	8	5	5
# M1 Cells[2]	30	28	31	38	33	35	30	31	30	38
# M2 Cells[2]	40	30	35	30	30	30	30	33	34	28
# M3 Cells[2]	30	42	34	32	37	35	40	36	36	34
Mitotic Index[3]	3.3	2.0	2.1	3.4	3.0	3.0	3.0	2.0	5.0	4.0

[1] Animal numbers 2021-2025 are males and 2531-2535 are females.

[2] Number of M1, M2 and M3 cells are obtained from 100 metaphases.

[3] MI = mitotic index; number mitotic figures x 100/1000 cells counted/animal.

TABLE 3

Number of Sister Chromatid Exchanges per cell at 10,000 mg/m^3 of Gasoline Ethanol Vapor Condensate Male and Female Rats

Number of SCE's from Second Division Metaphases										
	Animal Number[1]									
Cell No.	3021	3022	3023	3024	3025	3531	3532	3533	3534	3535
1	4	5	6	6	8	7	5	3	3	6
2	4	6	4	5	6	6	5	4	6	7
3	5	8	6	6	7	7	4	6	7	5
4	8	4	4	5	5	6	6	5	6	6
5	8	5	4	5	4	5	6	7	4	6
6	6	6	8	4	8	6	7	8	4	7
7	6	6	6	4	4	7	8	6	5	6
8	4	5	4	6	8	6	9	4	4	5
9	4	4	4	6	8	6	6	5	6	6
10	5	8	3	8	7	5	7	6	5	6
11	6	9	5	8	6	4	6	8	6	8
12	8	6	6	5	5	6	5	9	7	9
13	6	4	4	4	6	6	5	4	6	10
14	6	6	5	6	7	5	6	8	4	8
15	5	5	6	8	4	6	5	6	5	9
16	7	4	6	6	8	7	6	6	5	6
17	6	8	5	6	5	8	7	8	5	8
18	7	7	6	5	6	6	7	6	6	6
19	8	6	6	6	6	5	8	9	5	4
20	6	6	5	4	7	5	6	6	6	6
21	4	7	4	5	5	6	7	7	7	5
22	4	6	4	6	6	7	6	6	4	6
23	5	5	5	6	7	7	6	8	6	8
24	5	8	5	8	4	6	7	5	5	8
25	6	5	6	5	6	6	5	4	4	6
# M1 Cells[2]	35	33	36	30	38	34	30	31	40	38
# M2 Cells[2]	35	40	32	40	41	31	30	30	32	34
# M3 Cells[2]	30	27	32	30	21	35	40	39	28	28
Mitotic Index[3]	5.6	6.0	3.7	6.2	4.5	3.8	2.5	2.1	3.3	5.1

[1] Animal numbers 3021-3025 are males and 3531-3535 are females.

[2] Number of M1, M2 and M3 cells are obtained from 100 metaphases.

[3] MI = mitotic index; number mitotic figures x 100/1000 cells counted/animal.

TABLE 4

Number of Sister Chromatid Exchanges per cell at 20,000 mg/m^3 of Gasoline Ethanol Vapor Condensate Male and Female Rats

Number of SCE's from Second Division Metaphases										
	Animal Number[1]									
Cell No.	4031	4032	4033	4034	4035	4541	4542	4543	4544	4545
1	5	7	4	6	5	5	7	6	5	6
2	5	6	5	5	6	6	6	5	3	7
3	5	5	10	8	4	5	8	4	2	6
4	6	4	8	9	6	4	5	8	5	6
5	5	5	5	6	5	8	4	5	6	7
6	5	5	3	7	8	9	3	6	4	4
7	6	6	4	4	6	6	2	8	5	5
8	6	5	4	3	6	7	5	4	3	4
9	5	6	6	5	5	5	5	8	5	5
10	7	7	8	5	6	5	6	5	6	8
11	8	5	5	8	7	4	6	6	8	8
12	8	4	8	6	8	8	7	7	6	8
13	4	8	5	5	6	6	4	8	4	4
14	5	5	3	10	6	4	5	9	5	8
15	4	7	6	5	5	9	6	10	8	5
16	5	4	4	6	6	4	8	8	5	6
17	4	9	5	6	5	6	9	5	5	6
18	4	6	6	7	4	7	6	5	4	4
19	5	11	6	5	6	5	6	6	3	6
20	5	10	5	6	7	8	4	4	5	5
21	6	6	4	6	6	10	5	8	4	4
22	5	8	5	5	5	4	5	6	3	6
23	3	9	6	7	5	5	6	6	5	7
24	4	4	6	6	10	6	5	7	6	8
25	3	5	5	6	6	8	5	4	7	9
# M1 Cells[2]	26	34	26	28	31	40	33	30	34	36
# M2 Cells[2]	30	29	40	36	33	39	37	38	36	30
# M3 Cells[2]	44	36	34	36	36	21	30	42	30	44
Mitotic Index[3]	3.8	4.8	5.0	4.0	4.6	3.1	4.0	2.8	3.8	2.1

[1] Animal numbers 4031-4035 are males and 4541-4545 are females.

[2] Number of M1, M2 and M3 cells are obtained from 100 metaphases.

[3] MI = mitotic index; number mitotic figures x 100/1000 cells counted/animal.

TABLE 5

Number of Sister Chromatid Exchanges per cell at 5 mg/kg Cyclophosphamide Male and Female Rats

Number of SCE's from Second Division Metaphases										
	Animal Number[1]									
Cell No.	5031	5032	5033	5034	5035	5541	5542	5543	5544	5545
1	30	18	26	36	31	22	25	21	25	30
2	20	20	30	35	30	24	20	30	19	36
3	25	28	33	33	26	26	18	21	21	31
4	28	25	25	26	30	24	19	22	22	33
5	26	20	22	30	30	30	18	25	21	28
6	21	20	26	31	34	30	21	24	20	29
7	20	19	25	30	30	31	20	20	19	20
8	23	25	22	30	25	24	22	21	30	21
9	20	26	21	29	26	26	20	20	30	24
10	21	20	25	30	21	24	25	21	25	26
11	25	22	26	31	25	20	22	22	20	20
12	22	26	28	26	26	21	21	20	21	19
13	21	21	25	24	26	22	20	21	22	22
14	20	20	24	20	27	23	21	23	23	26
15	23	21	26	22	28	24	18	20	24	24
16	24	24	24	23	26	25	19	20	22	20
17	20	24	22	24	30	26	20	22	21	21
18	21	26	24	30	31	20	21	20	22	22
19	20	20	22	31	26	21	20	21	23	18
20	22	28	26	36	25	28	22	20	20	19
21	21	25	26	24	26	20	20	20	22	20
22	20	19	29	22	28	24	20	20	26	24
23	20	18	30	21	20	21	18	24	24	20
24	20	28	31	22	21	22	18	20	20	20
25	20	26	34	24	20	23	19	22	20	20
# M1 Cells[2]	38	45	48	42	44	40	43	43	30	38
# M2 Cells[2]	50	33	35	35	36	44	40	40	40	40
# M3 Cells[2]	12	13	17	23	20	16	17	17	30	22
Mitotic Index[3]	3.3	3.6	3.0	3.3	2.2	2.2	2.0	2.3	4.0	2.8

[1] Animal numbers 5031-5035 are males and 5541-5545 are females.
[2] Number of M1, M2 and M3 cells are obtained from 100 metaphases.
[3] MI = mitotic index; number mitotic figures x 100/1000 cells counted/animal.

TABLE 6

Summary of Sister Chromatid Exchange Data – Gasoline Ethanol Vapor Condensate Male Rats

Sister Chromatid Exchange data																		
				Range of SCEs per Animal				Group Range			Group Mean			AGT		MI
Treatment	Animal #	# of Metaphases Scored	Total # of SCEs per Animal	Min		Max	Mean SCEs per cell	Min		Max	± Std. Dev.			per Animal	per Group	per Group
Air	1031	25	160	5	-	10	6.4							26		
	1032	25	152	4	-	8	6.1							28		
	1033	25	159	4	-	9	6.4	2	to	10	6.1	±	1.2	26	26	2.6
	1034	25	144	3	-	8	5.8							26		
	1035	25	147	4	-	7	5.9							26		
Gasoline Ethanol Vapor Condensate 2000 mg/m^3	2021	25	140	4	-	9	5.6							26		
	2022	25	143	4	-	8	5.7							24		
	2023	25	141	4	-	7	5.6	2	to	9	‡5.5	±	1.1	25	25	2.8
	2024	25	135	4	-	7	5.4							26		
	2025	25	129	2	-	7	5.2							25		
Gasoline Ethanol Vapor Condensate 10,000 mg/m^3																
	3021	25	143	4	-	8	5.7							26		
	3022	25	149	4	-	9	6.0							26		
	3023	25	127	3	-	8	5.1	3	to	9	5.7	±	1.3	26	26	5.2
	3024	25	143	4	-	8	5.7							26		
	3025	25	153	4	-	8	6.1							28		
Gasoline Ethanol Vapor Condensate 20,000 mg/m^3																
	4031	25	128	3	-	8	5.1							23		
	4032	25	157	4	-	11	6.3							26		
	4033	25	136	3	-	10	5.4	3	to	11	5.8	±	1.6	25	25	4.4
	4034	25	152	3	-	10	6.1							25		
	4035	25	149	4	-	10	6.0							25		
Cyclophosphamide 5 mg/kg																
	5031	25	553	20	-	30	22.1							29		
	5032	25	569	18	-	28	22.8							34		
	5033	25	652	21	-	34	26.1	18	to	36	‡25.1	±	4.2	30	30	3.1
	5034	25	690	20	-	36	27.6							28		
	5035	25	668	20	-	34	26.7							29		

‡ = one-tailed Dunnett's t test ($p \leq 0.05$)

MI=Mitotic Index (Number of cells in mitosis out of 1000 cells)

AGT=Average generation time: Number of hours in BrdU X 100/ (number M_1 cells x 1)+(number M_2 cells x 2)+(number M_3 cells x 3)

TABLE 7

Summary of Sister Chromatid Exchange Data – Gasoline Ethanol Vapor Condensate Female Rats

Sister Chromatid Exchange data																		
Treatment	Animal #	# of Metaphases Scored	Total # of SCEs per Animal	Range of SCEs per Animal Min	-	Max	Mean SCEs per cell	Group Range Min	to	Max	Group Mean	±	Std. Dev.	AGT per Animal	AGT per Group	MI per Group
Air	1541	25	152	4	-	8	6.1							26		
	1542	25	172	6	-	9	6.9							28		
	1543	25	151	4	-	9	6.0	4	to	9	6.2	±	1.2	26	27	4.1
	1544	25	141	4	-	8	5.6							28		
	1545	25	157	4	-	9	6.3							27		
Gasoline Ethanol Vapor Condensate 2000 mg/m^3	2531	25	139	2	-	10	5.6							26		
	2532	25	150	3	-	10	6.0							24		
	2533	25	147	4	-	8	5.9	2	to	10	5.7	±	1.5	25	25	3.4
	2534	25	148	4	-	10	5.9							25		
	2535	25	132	3	-	7	5.3							26		
Gasoline Ethanol Vapor Condensate 10,000 mg/m^3																
	3531	25	151	4	-	8	6.0							25		
	3532	25	155	4	-	9	6.2							24		
	3533	25	154	3	-	9	6.2	3	to	10	6.1	±	1.3	25	26	3.4
	3534	25	131	3	-	7	5.2							27		
	3535	25	167	4	-	10	6.7							27		
Gasoline Ethanol Vapor Condensate 20,000 mg/m^3																
	4541	25	154	4	-	10	6.2							28		
	4542	25	138	2	-	9	5.5							26		
	4543	25	158	4	-	10	6.3	2	to	10	5.8	±	1.7	22	25	3.2
	4544	25	122	3	-	8	4.9							26		
	4545	25	152	4	-	9	6.1							22		
Cyclophosphamide 5 mg/kg																
	5541	25	601	20	-	31	24.0							29		
	5542	25	507	18	-	25	20.3							29		
	5543	25	540	20	-	30	21.6	18	to	36	‡22.4	±	3.5	29	28	2.7
	5544	25	562	19	-	30	22.5							26		
	5545	25	593	18	-	36	23.7							28		

‡ = one-tailed Dunnett's t test ($p \leq 0.05$)

MI=Mitotic Index (Number of cells in mitosis out of 1000 cells)

AGT=Average generation time: Number of hours in BrdU X 100/ (number M_1 cells x 1)+(number M_2 cells x 2)+(number M_3 cells x 3)

Appendix A: Contracting Sponsor's Exposure Data and Animal Data

	Animal Exposure and Animal Data Preface	Appendix A

INTRODUCTION: The following is data generated at Huntingdon Life Sciences, East Millstone, NJ. The separately issued main study report should be referenced for details of the procedures used for test atmosphere generation/characterization and animal evaluations.

STUDY DATES:

Date of Animal Receipt:	5 April 2001
Experimental Initiation Date:	19 April 2001 (in-life)
Experimental Completion Date:	17 May 2001 (in-life)

EXPOSURES AND IN-LIFE SUMMARY: The actual measured results during the exposures were comparable to the targeted exposure levels. There were no exposure-related effects seen in the test animals with regards to body weights and feed consumption.

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Chamber Monitoring Results
Cumulative Exposure Record
Group IA - 0 mg/m³ (Air Control)

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
				Mean	Individual								Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)					MMAD (μm)	GSD	TMC (mg/m³)	(°C)	(%)
2	19-Apr-01	1	0	0	0	0	0	0		1.752	2.044	2.68E-03	24	50
3	20-Apr-01	2	0	0	0	0	0	0					24	50
6	23-Apr-01	3	0	0	0	0	0	0					24	49
7	24-Apr-01	4	0	0	0	0	0	0					23	54
8	25-Apr-01	5	0	0	0	0	0	0					24	47
9	26-Apr-01	6	0	0	0	0	0	0		1.399	1.888	2.83E-03	25	46
10	27-Apr-01	7	0	0	0	0	0	0					24	48
13	30-Apr-01	8	0	0	0	0	0	0					24	47
14	1-May-01	9	0	0	0	0	0	0					24	38
15	2-May-01	10	0	0	0	0	0	0					25	44
16	3-May-01	11	0	0	0	0	0	0		0.9981	1.830	3.81E-03	25	44
17	4-May-01	12	0	0	0	0	0	0					23	49
20	7-May-01	13	0	0	0	0	0	0					24	45
21	8-May-01	14	0	0	0	0	0	0					24	46
22	9-May-01	15	0	0	0	0	0	0					24	47
23	10-May-01	16	0	0	0	0	0	0		1.407	1.574	2.26E-03	24	46
24	11-May-01	17	0	0	0	0	0	0					24	45
27	14-May-01	18	0	0	0	0	0	0					24	45
28	15-May-01	19	0	0	0	0	0	0					25	45
29	16-May-01	20	0	0	0	0	0	0					25	41
		Mean	0		0					1.389	1.834	2.90E-03	24.2	46.3
		S.D.	0		0					0.308	0.195	6.56E-04	0.6	3.4

Chamber Monitoring Results
Cumulative Exposure Record
Group IB - 0 mg/m³ (Air Control)

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
				Mean	Individual								Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)					MMAD (μm)	GSD	TMC (mg/m³)	(°C)	(%)
2	19-Apr-01	1	0	0	0	0	0	0		3.223	2.156	4.38E-03	24	46
3	20-Apr-01	2	0	0	0	0	0	0					24	46
6	23-Apr-01	3	0	0	0	0	0	0					23	48
7	24-Apr-01	4	0	0	0	0	0	0					24	53
8	25-Apr-01	5	0	0	0	0	0	0					25	46
9	26-Apr-01	6	0	0	0	0	0	0		1.557	1.896	4.20E-03	25	45
10	27-Apr-01	7	0	0	0	0	0	0					25	45
13	30-Apr-01	8	0	0	0	0	0	0					25	45
14	1-May-01	9	0	0	0	0	0	0					24	37
15	2-May-01	10	0	0	0	0	0	0					24	42
16	3-May-01	11	0	0	0	0	0	0		1.114	2.079	4.27E-03	24	43
17	4-May-01	12	0	0	0	0	0	0					23	48
20	7-May-01	13	0	0	0	0	0	0					24	43
21	8-May-01	14	0	0	0	0	0	0					25	44
22	9-May-01	15	0	0	0	0	0	0					25	44
23	10-May-01	16	0	0	0	0	0	0		1.732	1.802	3.71E-03	25	44
24	11-May-01	17	0	0	0	0	0	0					25	43
27	14-May-01	18	0	0	0	0	0	0					25	43
28	15-May-01	19	0	0	0	0	0	0					25	44
29	16-May-01	20	0	0	0	0	0	0					24	39
		Mean	0		0					1.907	1.983	4.14E-03	24.4	44.4
		S.D.	0		0					0.915	0.163	2.96E-04	0.7	3.3

Chamber Monitoring Results
Cumulative Exposure Record
Group IIA - 2000 mg/m^3

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment	
				Mean	Individual								Mean	
										MMAD	GSD	TMC	Temperature	Humidity
			(mg/m^3)	(mg/m^3)	(mg/m^3)					(μm)		(mg/m^3)	(°C)	(%)
2	19-Apr-01	1	2870	2173	2360	2270	1920	2140		2.190	2.590	3.00E-03	24	48
3	20-Apr-01	2	2870	2138	2110	2290	1960	2190					24	47
6	23-Apr-01	3	2840	2078	2010	1920	2310	2070					23	48
7	24-Apr-01	4	3040	2150	2360	1990	1990	2260					23	53
8	25-Apr-01	5	2940	1898	1800	1600	2030	2160					23	47
9	26-Apr-01	6	3050	2118	2040	2150	2030	2250		1.511	2.013	4.08E-03	24	46
10	27-Apr-01	7	3310	2158	2150	1920	2550	2010					24	45
13	30-Apr-01	8	3040	2090	2090	2240	1800	2230					24	46
14	1-May-01	9	2810	2235	2260	2190	2220	2270					24	37
15	2-May-01	10	2830	2105	1920	2070	2080	2350					24	43
16	3-May-01	11	2870	2073	1770	1960	2400	2160		1.088	2.023	5.46E-03	24	44
17	4-May-01	12	2880	2025	1930	2100	2010	2060					23	48
20	7-May-01	13	2840	2130	2170	1800	2390	2200					24	44
21	8-May-01	14	3060	2383	3680	1990	1940	1920					23	47
22	9-May-01	15	2970	2095	2200	1840	2180	2160					23	46
23	10-May-01	16	3010	2090	2080	2020	1860	2400		1.903	1.819	4.36E-03	24	46
24	11-May-01	17	3140	2053	2040	2090	1800	2280					24	45
27	14-May-01	18	3130	2018	1870	2240	1910	2050					24	45
28	15-May-01	19	3080	2043	2120	2070	1970	2010					24	47
29	16-May-01	20	3190	2020	2180	1930	1880	2090					24	41
		Mean	2989		2104					1.673	2.111	4.23E-03	23.7	45.7
		S.D.	139		250					0.479	0.333	1.01E-03	0.5	3.2

Chamber Monitoring Results
Cumulative Exposure Record
Group IIB - 2000 mg/m^3

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
				Mean	Individual								Temperature	Humidity
			(mg/m^3)	(mg/m^3)	(mg/m^3)					MMAD (μm)	GSD	TMC (mg/m^3)	(°C)	(%)
2	19-Apr-01	1	2870	2163	2400	2170	1880	2200		1.481	1.915	2.36E-03	23	47
3	20-Apr-01	2	2870	2193	1990	2320	1730	2730					23	47
6	23-Apr-01	3	2840	2160	2200	2010	2360	2070					23	47
7	24-Apr-01	4	3040	2190	2260	2070	2040	2390					23	53
8	25-Apr-01	5	2940	2098	2130	1980	2060	2220					24	47
9	26-Apr-01	6	3050	2163	2220	2240	2140	2050		1.410	1.716	3.50E-03	25	45
10	27-Apr-01	7	3310	2105	1780	2150	2500	1990					24	45
13	30-Apr-01	8	3040	2093	1900	2340	2020	2110					25	46
14	1-May-01	9	2810	2133	2150	1990	2190	2200					24	36
15	2-May-01	10	2830	1970	1920	1920	1900	2140					24	42
16	3-May-01	11	2870	1960	1860	1880	2160	1940		1.304	2.308	6.83E-03	24	43
17	4-May-01	12	2880	1975	1760	2110	2010	2020					22	48
20	7-May-01	13	2840	2168	2150	1930	2210	2380					24	43
21	8-May-01	14	3060	2013	1910	2000	1930	2210					24	46
22	9-May-01	15	2970	2123	2210	2040	2080	2160					24	45
23	10-May-01	16	3010	2200	2180	2130	2090	2400		1.433	1.594	2.88E-03	24	45
24	11-May-01	17	3140	2065	1770	2300	2000	2190					24	45
27	14-May-01	18	3130	1920	1800	1990	1880	2010					24	44
28	15-May-01	19	3080	2048	2270	2120	1890	1910					24	45
29	16-May-01	20	3190	1940	1990	1900	1800	2070					23	40
		Mean	2989		2084					1.407	1.883	3.89E-03	23.8	45.0
		S.D.	139		184					0.075	0.313	2.01E-03	0.7	3.4

Chamber Monitoring Results
Cumulative Exposure Record
Group IIIA - 10000 mg/m^3

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration					Particle Size Determinations			Chamber Environment Mean	
				Mean	Individual				MMAD	GSD	TMC	Temperature	Humidity
			(mg/m^3)	(mg/m^3)	(mg/m^3)				(μm)		(mg/m^3)	(°C)	(%)
2	19-Apr-01	1	12300	9908	10300	9130	10100	10100	1.824	2.273	2.73E-03	24	47
3	20-Apr-01	2	12300	9700	9130	9820	9850	10000				24	46
6	23-Apr-01	3	12100	10200	9980	10100	10700	10000				23	47
7	24-Apr-01	4	12500	9765	9520	9520	10100	9920				23	53
8	25-Apr-01	5	12500	10250	10500	10000	10300	10200				24	49
9	26-Apr-01	6	12700	10430	10500	10300	10200	10700	1.404	1.569	2.61E-03	24	48
10	27-Apr-01	7	12200	10900	10400	11800	10500	10900				24	47
13	30-Apr-01	8	12000	9745	10400	8730	10200	9650				25	47
14	1-May-01	9	11800	10600	11700	10500	9790	10400				25	37
15	2-May-01	10	11500	10710	11500	9820	11100	10400				25	42
16	3-May-01	11	11300	10450	11200	10500	10000	10100	1.077	1.863	4.56E-03	25	43
17	4-May-01	12	11700	9748	9460	10400	9030	10100				23	47
20	7-May-01	13	11900	10360	10900	9950	10200	10400				25	44
21	8-May-01	14	11900	10100	11200	9690	9390	10100				24	45
22	9-May-01	15	11900	9793	10100	10100	9320	9650				24	45
23	10-May-01	16	11700	10190	9850	10500	10000	10400	1.516	1.720	2.88E-03	24	46
24	11-May-01	17	12400	10070	9880	10200	10000	10200				24	45
27	14-May-01	18	12600	10070	9490	9790	10600	10400				24	45
28	15-May-01	19	12400	10080	10700	9650	10200	9750				25	47
29	16-May-01	20	12500	10410	11000	11300	9980	9360				24	41
		Mean	12110		10170				1.455	1.856	3.20E-03	24.2	45.6
		S.D.	391		582				0.308	0.303	9.17E-04	0.7	3.3

Chamber Monitoring Results
Cumulative Exposure Record
Group IIIB - 10000 mg/m³

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment	
				Mean	Individual								Mean	
										MMAD	GSD	TMC	Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)					(μm)		(mg/m³)	(°C)	(%)
2	19-Apr-01	1	12300	10500	10500	9790	10900	10800		8.854	2.709	6.29E-03	24	47
3	20-Apr-01	2	12300	10520	11300	10200	9880	10700					24	47
6	23-Apr-01	3	12100	10430	10500	10000	10800	10400					23	47
7	24-Apr-01	4	12500	10480	10400	10500	10300	10700					24	53
8	25-Apr-01	5	12500	10430	10200	10600	10300	10600					24	49
9	26-Apr-01	6	12700	10700	10700	10200	9980	11900		1.384	1.639	2.98E-03	25	47
10	27-Apr-01	7	12200	9528	9690	8020	10300	10100					25	46
13	30-Apr-01	8	12000	10340	9650	11200	10800	9720					25	46
14	1-May-01	9	11800	10360	11300	10000	9820	10300					24	36
15	2-May-01	10	11500	10900	10900	10200	11700	10800					24	42
16	3-May-01	11	11300	10480	10200	10800	10600	10300		1.352	2.089	5.55E-03	24	43
17	4-May-01	12	11700	9828	8600	9490	11400	9820					23	48
20	7-May-01	13	11900	9945	9790	9790	10000	10200					24	44
21	8-May-01	14	11900	9858	10800	9390	9390	9850					24	44
22	9-May-01	15	11900	10420	10400	10800	10500	9980					25	45
23	10-May-01	16	11700	10260	9650	10600	10300	10500		1.565	1.713	3.34E-03	25	45
24	11-May-01	17	12400	10320	9690	10600	10200	10800					25	44
27	14-May-01	18	12600	10320	10900	10900	9820	9650					25	44
28	15-May-01	19	12400	10230	9320	10600	10700	10300					25	46
29	16-May-01	20	12500	9935	9650	9390	10400	10300					24	40
		Mean	12110		10290					3.289	2.038	4.54E-03	24.3	45.2
		S.D.	391		624					3.711	0.489	1.63E-03	0.7	3.5

Chamber Monitoring Results
Cumulative Exposure Record
Group IVA - 20000 mg/m³

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
				Mean	Individual								Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)					MMAD (μm)	GSD	TMC (mg/m³)	(°C)	(%)
2	19-Apr-01	1	25500	20480	22400	19000	19600	20900		1.272	2.164	3.02E-03	25	48
3	20-Apr-01	2	25800	19780	20000	19500	19600	20000					25	49
6	23-Apr-01	3	26200	20750	20300	21200	22200	19300					24	49
7	24-Apr-01	4	26500	19600	19700	19900	18700	20100					23	55
8	25-Apr-01	5	26800	20150	20200	19600	20700	20100					24	49
9	26-Apr-01	6	26700	20430	20400	20500	20200	20600		1.628	1.807	3.52E-03	24	50
10	27-Apr-01	7	25800	20900	20900	20800	21600	20300					24	48
13	30-Apr-01	8	26400	21030	21600	21000	21100	20400					24	48
14	1-May-01	9	24600	20130	20900	19000	19700	20900					25	37
15	2-May-01	10	23600	19980	20200	19400	19900	20400					25	45
16	3-May-01	11	24500	19580	20200	18100	19300	20700		4.508	2.831	8.30E-03	25	46
17	4-May-01	12	25300	19830	18500	20000	20700	20100					23	52
20	7-May-01	13	25300	20380	19600	20300	21600	20000					25	46
21	8-May-01	14	25000	19930	20100	20400	19100	20100					24	46
22	9-May-01	15	25700	20700	19900	20900	21300	20700					24	46
23	10-May-01	16	26600	20200	19600	20300	20600	20300		1.321	1.568	2.30E-03	24	47
24	11-May-01	17	27300	20230	18700	20300	20100	21800					24	47
27	14-May-01	18	26600	20450	19900	20500	20500	20900					24	45
28	15-May-01	19	26600	20030	19300	19500	21400	19900					25	48
29	16-May-01	20	26300	19550	19900	18700	19600	20000					25	44
		Mean	25860		20200					2.182	2.093	4.29E-03	24.3	47.3
		S.D.	929		820					1.558	0.550	2.72E-03	0.7	3.5

Table A Gasoline Ethanol Vapor Condensate: A 13-Week Whole-Body Inhalation Toxicity Study in Rats 00-6127

Chamber Monitoring Results
Cumulative Exposure Record
Group IVB - 20000 mg/m^3

Day	Date	Exposure Number	Nominal	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment	
				Mean	Individual								Mean	
										MMAD	GSD	TMC	Temperature	Humidity
			(mg/m^3)	(mg/m^3)	(mg/m^3)					(μm)		(mg/m^3)	(°C)	(%)
2	19-Apr-01	1	25500	19500	20000	18400	19300	20300		0.9562	1.715	2.50E-03	24	51
3	20-Apr-01	2	25800	19830	19800	20200	19700	19600					24	51
6	23-Apr-01	3	26200	20850	19700	20600	22400	20700					24	53
7	24-Apr-01	4	26500	19350	19600	19500	18700	19600					24	58
8	25-Apr-01	5	26800	20880	21300	20000	21000	21200					25	53
9	26-Apr-01	6	26700	20480	20500	21000	20300	20100		2.933	2.023	9.27E-03	25	51
10	27-Apr-01	7	25800	20200	20200	19900	21000	19700					25	50
13	30-Apr-01	8	26400	20000	20200	19300	19300	21200					25	51
14	1-May-01	9	24600	21150	22300	21000	20600	20700					25	40
15	2-May-01	10	23600	20050	18000	20000	20100	22100					25	47
16	3-May-01	11	24500	20680	20500	18600	21800	21800		1.187	1.849	3.58E-03	24	47
17	4-May-01	12	25300	19600	18400	19600	20300	20100					23	53
20	7-May-01	13	25300	19880	19100	20000	20800	19600					24	49
21	8-May-01	14	25000	19550	19100	20000	19300	19800					25	49
22	9-May-01	15	25700	20130	19500	19600	20900	20500					25	49
23	10-May-01	16	26600	20430	18800	20900	20900	21100		1.459	1.870	2.45E-03	25	51
24	11-May-01	17	27300	21180	20300	21100	21000	22300					25	49
27	14-May-01	18	26600	20400	19600	20700	20800	20500					26	47
28	15-May-01	19	26600	19380	18500	18700	20200	20100					25	50
29	16-May-01	20	26300	19980	20200	19400	20000	20300					25	45
		Mean	25860		20170					1.634	1.864	4.45E-03	24.7	49.7
		S.D.	929		931					0.890	0.126	3.26E-03	0.7	3.6

TABLE B

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

MALES — SUMMARY OF CLINICAL OBSERVATIONS

	GROUP#	DAY OF STUDY -10	TOTAL
# OF ANIMALS EXAMINED	1	5	
	2	5	
	3	5	
	4	5	
	5	5	
NORMAL			
WITHIN NORMAL LIMITS	1	5	5
	2	5	5
	3	5	5
	4	5	5
	5	5	5

TABLE B

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

FEMALES

SUMMARY OF CLINICAL OBSERVATIONS

	GROUP#	DAY OF STUDY -10	TOTAL
# OF ANIMALS EXAMINED	1	5	
	2	5	
	3	5	
	4	5	
	5	5	
NORMAL			
WITHIN NORMAL LIMITS	1	5	5
	2	5	5
	3	5	5
	4	5	5
	5	5	5

TABLE C

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

MALES

MEAN BODY WEIGHTS (GRAMS)

DOSE GROUP:		I	II	III	IV	V
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	SCE+CONTROL
WEEK -1	MEAN	154	154	153	154	156
	S.D.	6.3	6.9	6.8	6.5	8.4
	N	5	5	5	5	5
WEEK 0	MEAN	220	229	230	228	235
	S.D.	11.2	7.3	9.0	8.2	14.5
	N	5	5	5	5	5
WEEK 1	MEAN	269	283	277	277	298
	S.D.	16.3	12.6	15.1	17.5	19.3
	N	5	5	5	5	5
WEEK 2	MEAN	299	318	313	307	331
	S.D.	23.4	16.6	19.0	25.3	31.1
	N	5	5	5	5	5
WEEK 3	MEAN	331	358	345	345	378
	S.D.	29.6	14.7	17.5	32.8	33.5
	N	5	5	5	5	5
WEEK 4	MEAN	365	389	376	375	413
	S.D.	34.2	14.6	23.5	34.3	34.3
	N	5	5	5	5	5

No statistically significant differences

TABLE C

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

FEMALES — MEAN BODY WEIGHTS (GRAMS)

DOSE GROUP:		I	II	III	IV	V
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	SCE+CONTROL
WEEK -1	MEAN	135	135	137	135	134
	S.D.	6.3	6.9	5.5	6.3	6.8
	N	5	5	5	5	5
WEEK 0	MEAN	173	177	176	179	172
	S.D.	13.9	7.1	10.8	12.2	8.9
	N	5	5	5	5	5
WEEK 1	MEAN	195	201	198	204	199
	S.D.	18.3	10.8	11.0	16.2	12.4
	N	5	5	5	5	5
WEEK 2	MEAN	214	218	219	225	212
	S.D.	22.9	10.8	17.9	23.5	13.6
	N	5	5	5	5	5
WEEK 3	MEAN	226	233	229	245	229
	S.D.	26.3	7.6	15.4	31.0	11.0
	N	5	5	5	5	5
WEEK 4	MEAN	239	246	242	258	239
	S.D.	27.7	12.6	24.0	33.2	14.0
	N	5	5	5	5	5

No statistically significant differences

TABLE D

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

MALES — MEAN BODY WEIGHT CHANGE (GRAMS)

DOSE GROUP:		I	II	III	IV	V
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	SCE+CONTROL
WEEK 0 TO 1	MEAN	48	54	47	49	63*
	S.D.	5.6	5.4	7.3	12.2	5.4
	N	5	5	5	5	5
WEEK 0 TO 2	MEAN	79	89	83	79	96
	S.D.	13.5	10.8	10.9	21.2	17.2
	N	5	5	5	5	5
WEEK 0 TO 3	MEAN	111	129	115	117	143
	S.D.	19.4	8.5	9.4	28.7	21.9
	N	5	5	5	5	5
WEEK 0 TO 4	MEAN	144	161	146	147	179
	S.D.	23.7	8.1	15.9	30.8	20.8
	N	5	5	5	5	5

Statistical key: * = $p<0.05$

TABLE D

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

FEMALES

MEAN BODY WEIGHT CHANGE (GRAMS)

DOSE GROUP:		I	II	III	IV	V
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	SCE+CONTROL
WEEK 0 TO 1	MEAN	22	24	22	25	28
	S.D.	6.8	5.0	2.4	7.6	8.4
	N	5	5	5	5	5
WEEK 0 TO 2	MEAN	41	41	43	46	40
	S.D.	10.6	4.8	8.6	12.0	8.0
	N	5	5	5	5	5
WEEK 0 TO 3	MEAN	53	56	53	66	58
	S.D.	13.2	6.1	9.0	19.1	6.0
	N	5	5	5	5	5
WEEK 0 TO 4	MEAN	66	70	66	79	68
	S.D.	14.7	7.0	19.2	21.0	8.6
	N	5	5	5	5	5

No statistically significant differences

TABLE E

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

MALES — MEAN FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

DOSE GROUP:		I	II	III	IV	V
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	SCE+CONTROL
WEEK 0	MEAN	108	115	114	117	117
	S.D.	4.2	4.7	10.9	5.0	3.9
	N	5	5	5	5	5
WEEK 1	MEAN	95	100	100	97	103*
	S.D.	3.3	2.8	5.7	5.3	2.8
	N	5	5	5	5	5
WEEK 2	MEAN	82	86	85	83	90**
	S.D.	4.9	1.9	2.8	4.6	2.6
	N	5	5	5	5	5
WEEK 3	MEAN	74	78	77	77	82
	S.D.	3.2	2.0	3.5	4.3	4.5
	N	5	5	4	5	5
WEEK 4	MEAN	70	71	75	71	73
	S.D.	3.1	2.3	5.7	2.2	4.2
	N	5	5	5	5	4

Statistical key: * = $p<0.05$ ** = $p<0.01$

TABLE E

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

FEMALES — MEAN FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

DOSE GROUP:		I	II	III	IV	V
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	SCE+CONTROL
WEEK 0	MEAN	105	109	110	113	107
	S.D.	9.0	10.0	2.3	5.6	7.5
	N	5	5	5	5	5
WEEK 1	MEAN	91	94	97	105*	102
	S.D.	5.8	4.9	2.5	11.6	4.9
	N	5	5	5	5	5
WEEK 2	MEAN	88	92	91	93	91
	S.D.	6.0	5.7	4.6	3.8	7.8
	N	5	5	5	5	5
WEEK 3	MEAN	83	85	83	85	87
	S.D.	3.0	3.8	1.5	1.1	4.6
	N	5	4	5	4	5
WEEK 4	MEAN	76	83	85	80	81
	S.D.	4.5	3.8	1.9	1.7	7.1
	N	3	5	5	5	5

Statistical key: * = $p<0.05$

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

MALES GROUP I 0 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
1031	WITHIN NORMAL LIMITS		P
1032	WITHIN NORMAL LIMITS		P
1033	WITHIN NORMAL LIMITS		P
1034	WITHIN NORMAL LIMITS		P
1035	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

MALES GROUP II 2,000 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
2021	WITHIN NORMAL LIMITS		P
2022	WITHIN NORMAL LIMITS		P
2023	WITHIN NORMAL LIMITS		P
2024	WITHIN NORMAL LIMITS		P
2025	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

MALES GROUP III 10,000 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
3021	WITHIN NORMAL LIMITS		P
3022	WITHIN NORMAL LIMITS		P
3023	WITHIN NORMAL LIMITS		P
3024	WITHIN NORMAL LIMITS		P
3025	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

MALES GROUP IV 20,000 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
4031	WITHIN NORMAL LIMITS		P
4032	WITHIN NORMAL LIMITS		P
4033	WITHIN NORMAL LIMITS		P
4034	WITHIN NORMAL LIMITS		P
4035	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

MALES GROUP V SCE+CONTROL

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
5031	WITHIN NORMAL LIMITS		P
5032	WITHIN NORMAL LIMITS		P
5033	WITHIN NORMAL LIMITS		P
5034	WITHIN NORMAL LIMITS		P
5035	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

FEMALES GROUP I 0 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	1 0
1541	WITHIN NORMAL LIMITS		P
1542	WITHIN NORMAL LIMITS		P
1543	WITHIN NORMAL LIMITS		P
1544	WITHIN NORMAL LIMITS		P
1545	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

FEMALES GROUP II 2,000 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	-1 0
2531	WITHIN NORMAL LIMITS		P
2532	WITHIN NORMAL LIMITS		P
2533	WITHIN NORMAL LIMITS		P
2534	WITHIN NORMAL LIMITS		P
2535	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

FEMALES GROUP III 10,000 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
3531	WITHIN NORMAL LIMITS		P
3532	WITHIN NORMAL LIMITS		P
3533	WITHIN NORMAL LIMITS		P
3534	WITHIN NORMAL LIMITS		P
3535	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

FEMALES GROUP IV 20,000 mg/m3

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
4541	WITHIN NORMAL LIMITS		P
4542	WITHIN NORMAL LIMITS		P
4543	WITHIN NORMAL LIMITS		P
4544	WITHIN NORMAL LIMITS		P
4545	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE F

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL CLINICAL OBSERVATIONS

FEMALES GROUP V SCE+CONTROL

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
5541	WITHIN NORMAL LIMITS		P
5542	WITHIN NORMAL LIMITS		P
5543	WITHIN NORMAL LIMITS		P
5544	WITHIN NORMAL LIMITS		P
5545	WITHIN NORMAL LIMITS		P

CODE: 1-SLIGHT 2-MODERATE 3-MARKED P-PRESENT

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

MALES GROUP I 0 mg/m3

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
1031	147	204	247	261	281	308
1032	158	225	273	301	346	386
1033	157	231	289	322	353	393
1034	148	213	258	298	329	358
1035	162	227	277	312	347	378
MEAN	154	220	269	299	331	365
S.D.	6.3	11.2	16.3	23.4	29.6	34.2
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

MALES GROUP II 2,000 mg/m3

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
2021	153	229	283	311	364	393
2022	164	237	296	344	377	403
2023	158	234	293	321	360	398
2024	150	224	276	313	353	387
2025	146	219	265	300	337	366
MEAN	154	229	283	318	358	389
S.D.	6.9	7.3	12.6	16.6	14.7	14.6
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

MALES GROUP III 10,000 mg/m3

	WEEK OF STUDY					
ANIMAL#	-1	0	1	2	3	4
3021	161	235	290	330	348	374
3022	150	226	273	312	345	380
3023	158	243	295	334	371	412
3024	154	227	264	301	335	363
3025	144	219	261	289	324	349
MEAN	153	230	277	313	345	376
S.D.	6.8	9.0	15.1	19.0	17.5	23.5
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

MALES GROUP IV 20,000 mg/m3

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
4031	161	228	268	299	346	372
4032	152	230	286	322	357	386
4033	157	227	260	272	296	323
4034	144	217	269	303	342	378
4035	158	240	303	339	387	417
MEAN	154	228	277	307	345	375
S.D.	6.5	8.2	17.5	25.3	32.8	34.3
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

MALES GROUP V SCE+CONTROL

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
5031	158	238	302	335	376	418
5032	144	215	272	292	343	369
5033	160	238	297	327	361	406
5034	166	228	292	321	377	410
5035	151	254	326	378	433	465
MEAN	156	235	298	331	378	413
S.D.	8.4	14.5	19.3	31.1	33.5	34.3
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALES GROUP I 0 mg/m3

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
1541	142	182	201	219	232	245
1542	126	149	164	175	180	192
1543	137	177	192	217	235	246
1544	139	175	204	228	237	249
1545	133	183	212	231	246	264
MEAN	135	173	195	214	226	239
S.D.	6.3	13.9	18.3	22.9	26.3	27.7
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALES GROUP II 2,000 mg/m3

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
2531	139	178	200	214	226	246
2532	134	173	201	217	236	249
2533	144	189	216	237	243	266
2534	135	170	186	209	225	235
2535	125	174	199	214	236	236
MEAN	135	177	201	218	233	246
S.D.	6.9	7.1	10.8	10.8	7.6	12.6
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALES GROUP III 10,000 mg/m3

	WEEK OF STUDY					
ANIMAL#	-1	0	1	2	3	4
3531	130	160	183	200	209	214
3532	137	181	207	232	248	250
3533	134	171	192	204	219	231
3534	138	180	201	220	238	278
3535	144	188	209	241	233	238
MEAN	137	176	198	219	229	242
S.D.	5.5	10.8	11.0	17.9	15.4	24.0
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALES GROUP IV 20,000 mg/m3

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
4541	143	201	229	265	299	316
4542	130	171	186	207	221	235
4543	138	173	197	209	230	237
4544	128	177	201	219	235	254
4545	134	174	209	225	242	248
MEAN	135	179	204	225	245	258
S.D.	6.3	12.2	16.2	23.5	31.0	33.2
N	5	5	5	5	5	5

TABLE G

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHTS (GRAMS)

FEMALES GROUP V SCE+CONTROL

ANIMAL#	WEEK OF STUDY -1	0	1	2	3	4
5541	124	157	183	195	215	219
5542	131	175	202	219	236	257
5543	139	170	203	203	223	237
5544	135	178	193	212	229	242
5545	142	179	216	230	244	242
MEAN	134	172	199	212	229	239
S.D.	6.8	8.9	12.4	13.6	11.0	14.0
N	5	5	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

MALES GROUP I 0 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
1031	42	56	77	104
1032	47	76	121	161
1033	57	91	122	162
1034	45	85	116	144
1035	50	85	120	151
MEAN	48	79	111	144
S.D.	5.6	13.5	19.4	23.7
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

MALES GROUP II 2,000 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
2021	54	82	134	164
2022	59	107	140	166
2023	59	87	126	163
2024	53	89	129	163
2025	46	81	118	146
MEAN	54	89	129	161
S.D.	5.4	10.8	8.5	8.1
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

MALES GROUP III 10,000 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
3021	56	95	113	140
3022	47	85	119	154
3023	52	91	128	169
3024	38	74	108	136
3025	42	70	105	129
MEAN	47	83	115	146
S.D.	7.3	10.9	9.4	15.9
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

MALES GROUP IV 20,000 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
4031	40	72	118	144
4032	56	92	127	156
4033	33	46	69	96
4034	52	86	125	161
4035	63	99	146	177
MEAN	49	79	117	147
S.D.	12.2	21.2	28.7	30.8
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

MALES GROUP V SCE+CONTROL

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
5031	64	97	139	181
5032	57	77	128	154
5033	59	89	123	168
5034	64	93	149	181
5035	71	124	178	211
MEAN	63	96	143	179
S.D.	5.4	17.2	21.9	20.8
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

FEMALES GROUP I 0 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
1541	19	37	50	63
1542	15	26	31	43
1543	15	40	58	69
1544	29	53	61	74
1545	29	48	63	81
MEAN	22	41	53	66
S.D.	6.8	10.6	13.2	14.7
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

FEMALES GROUP II 2,000 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
2531	23	36	48	69
2532	28	44	63	76
2533	28	48	54	77
2534	16	38	55	64
2535	24	40	62	62
MEAN	24	41	56	70
S.D.	5.0	4.8	6.1	7.0
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

FEMALES GROUP III 10,000 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
3531	23	40	49	54
3532	26	52	67	69
3533	21	33	48	60
3534	20	40	57	98
3535	21	53	45	50
MEAN	22	43	53	66
S.D.	2.4	8.6	9.0	19.2
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

FEMALES GROUP IV 20,000 mg/m3

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
4541	29	64	99	115
4542	15	36	50	65
4543	25	36	57	64
4544	24	43	59	77
4545	35	51	69	74
MEAN	25	46	66	79
S.D.	7.6	12.0	19.1	21.0
N	5	5	5	5

TABLE H

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL BODY WEIGHT CHANGE (GRAMS)

FEMALES GROUP V SCE+CONTROL

ANIMAL#	WEEK OF STUDY 0-1	0-2	0-3	0-4
5541	26	38	58	62
5542	28	45	61	83
5543	32	32	53	66
5544	15	34	51	64
5545	38	51	65	64
MEAN	28	40	58	68
S.D.	8.4	8.0	6.0	8.6
N	5	5	5	5

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

MALES GROUP I 0 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
1031	106	95	79	71	67
1032	111	96	85	76	70
1033	106	94	79	74	75
1034	114	99	88	79	72
1035	104	90	76	71	69
MEAN	108	95	82	74	70
S.D.	4.2	3.3	4.9	3.2	3.1
N	5	5	5	5	5

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

MALES GROUP II 2,000 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
2021	121	100	88	80	73
2022	109	97	84	76	69
2023	112	101	85	75	71
2024	116	105	86	78	69
2025	117	98	88	79	75
MEAN	115	100	86	78	71
S.D.	4.7	2.8	1.9	2.0	2.3
N	5	5	5	5	5

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

MALES GROUP III 10,000 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
3021	95	98	84	72	67
3022	116	96	85	78	74
3023	118	101	87	80	77
3024	121	97	82	78	72
3025	120	110	89	SF	82
MEAN	114	100	85	77	75
S.D.	10.9	5.7	2.8	3.5	5.7
N	5	5	5	4	5

SF=Spilled Feeder

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

MALES GROUP IV 20,000 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
4031	109	91	83	77	68
4032	120	105	86	75	70
4033	114	93	75	70	71
4034	121	98	86	79	72
4035	118	97	85	82	74
MEAN	117	97	83	77	71
S.D.	5.0	5.3	4.6	4.3	2.2
N	5	5	5	5	5

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

MALES GROUP V SCE+CONTROL

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
5031	117	104	91	85	SF
5032	119	105	93	87	78
5033	121	104	90	78	75
5034	110	98	86	77	68
5035	117	102	90	82	74
MEAN	117	103	90	82	73
S.D.	3.9	2.8	2.6	4.5	4.2
N	5	5	5	5	4

SF=Spilled Feeder

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

FEMALES GROUP I 0 mg/m3

	WEEK OF STUDY				
ANIMAL#	0	1	2	3	4
1541	102	89	82	79	72
1542	102	89	83	84	SF
1543	103	85	93	84	SF
1544	97	91	88	83	77
1545	121	101	96	87	81
MEAN	105	91	88	83	76
S.D.	9.0	5.8	6.0	3.0	4.5
N	5	5	5	5	3

SF=Spilled Feeder

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

FEMALES GROUP II 2,000 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
2531	103	91	93	SF	87
2532	103	93	91	84	78
2533	102	93	83	83	82
2534	109	103	92	84	81
2535	126	92	99	91	86
MEAN	109	94	92	85	83
S.D.	10.0	4.9	5.7	3.8	3.8
N	5	5	5	4	5

SF=Spilled Feeder

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

FEMALES GROUP III 10,000 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
3531	108	96	86	81	88
3532	109	93	91	85	84
3533	111	99	92	82	84
3534	108	98	89	83	87
3535	113	99	99	82	85
MEAN	110	97	91	83	85
S.D.	2.3	2.5	4.6	1.5	1.9
N	5	5	5	5	5

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

FEMALES GROUP IV 20,000 mg/m3

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
4541	115	101	99	87	79
4542	106	126	92	SF	79
4543	109	97	91	85	82
4544	120	99	94	86	79
4545	113	104	90	84	81
MEAN	113	105	93	85	80
S.D.	5.6	11.6	3.8	1.1	1.7
N	5	5	5	4	5

SF=Spilled Feeder

TABLE I

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

INDIVIDUAL FEED CONSUMPTION VALUES (GRAMS/KG/DAY)

FEMALES GROUP V SCE+CONTROL

ANIMAL#	WEEK OF STUDY 0	1	2	3	4
5541	112	106	98	91	85
5542	111	106	97	92	86
5543	96	97	82	84	76
5544	112	106	96	87	86
5545	102	97	84	81	70
MEAN	107	102	91	87	81
S.D.	7.5	4.9	7.8	4.6	7.1
N	5	5	5	5	5

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

MALES GROUP I 0 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
1031	TERMINAL SACRIFICE	17-MAY-01	4	28
1032	TERMINAL SACRIFICE	17-MAY-01	4	28
1033	TERMINAL SACRIFICE	17-MAY-01	4	28
1034	TERMINAL SACRIFICE	17-MAY-01	4	28
1035	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

MALES GROUP II 2,000 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
2021	TERMINAL SACRIFICE	17-MAY-01	4	28
2022	TERMINAL SACRIFICE	17-MAY-01	4	28
2023	TERMINAL SACRIFICE	17-MAY-01	4	28
2024	TERMINAL SACRIFICE	17-MAY-01	4	28
2025	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

MALES GROUP III 10,000 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
3021	TERMINAL SACRIFICE	17-MAY-01	4	28
3022	TERMINAL SACRIFICE	17-MAY-01	4	28
3023	TERMINAL SACRIFICE	17-MAY-01	4	28
3024	TERMINAL SACRIFICE	17-MAY-01	4	28
3025	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

MALES GROUP IV 20,000 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
4031	TERMINAL SACRIFICE	17-MAY-01	4	28
4032	TERMINAL SACRIFICE	17-MAY-01	4	28
4033	TERMINAL SACRIFICE	17-MAY-01	4	28
4034	TERMINAL SACRIFICE	17-MAY-01	4	28
4035	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

MALES GROUP V SCE+CONTROL

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
5031	TERMINAL SACRIFICE	17-MAY-01	4	28
5032	TERMINAL SACRIFICE	17-MAY-01	4	28
5033	TERMINAL SACRIFICE	17-MAY-01	4	28
5034	TERMINAL SACRIFICE	17-MAY-01	4	28
5035	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

FEMALES GROUP I 0 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
1541	TERMINAL SACRIFICE	17-MAY-01	4	28
1542	TERMINAL SACRIFICE	17-MAY-01	4	28
1543	TERMINAL SACRIFICE	17-MAY-01	4	28
1544	TERMINAL SACRIFICE	17-MAY-01	4	28
1545	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

FEMALES GROUP II 2,000 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
2531	TERMINAL SACRIFICE	17-MAY-01	4	28
2532	TERMINAL SACRIFICE	17-MAY-01	4	28
2533	TERMINAL SACRIFICE	17-MAY-01	4	28
2534	TERMINAL SACRIFICE	17-MAY-01	4	28
2535	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

FEMALES GROUP III 10,000 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
3531	TERMINAL SACRIFICE	17-MAY-01	4	28
3532	TERMINAL SACRIFICE	17-MAY-01	4	28
3533	TERMINAL SACRIFICE	17-MAY-01	4	28
3534	TERMINAL SACRIFICE	17-MAY-01	4	28
3535	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

FEMALES GROUP IV 20,000 mg/m3

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
4541	TERMINAL SACRIFICE	17-MAY-01	4	28
4542	TERMINAL SACRIFICE	17-MAY-01	4	28
4543	TERMINAL SACRIFICE	17-MAY-01	4	28
4544	TERMINAL SACRIFICE	17-MAY-01	4	28
4545	TERMINAL SACRIFICE	17-MAY-01	4	28

TABLE J

GASOLINE ETHANOL VAPOR CONDENSATE: A-13-WEEK WHOLE-BODY
INHALATION TOXICITY STUDY IN RATS WITH NEUROTOXICITY ASSESSMENTS
AND 4-WEEK IN VIVO GENOTOXICITY AND IMMUNOTOXICITY ASSESSMENTS

ANIMAL TERMINATION HISTORY

FEMALES GROUP V SCE+CONTROL

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
5541	TERMINAL SACRIFICE	17-MAY-01	4	28
5542	TERMINAL SACRIFICE	17-MAY-01	4	28
5543	TERMINAL SACRIFICE	17-MAY-01	4	28
5544	TERMINAL SACRIFICE	17-MAY-01	4	28
5545	TERMINAL SACRIFICE	17-MAY-01	4	28