TRADE SECRET

Study Title

SATELLITE PROCEDURE
GASOLINE ETHANOL VAPOR CONDENSATE
RAT MICRONUCLEUS TEST

TEST GUIDELINES: US EPA Micronucleus Assay 79.64, CFR Vol. 59, No. 122, 27 June 1994.

US EPA (1998) Health Effects Test Guidelines; OPPTS 870.5395 Mammalian Erythrocyte Micronucleus Test.

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STUDY COMPLETED ON: 10 November 2009

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COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

The slide evaluation phase of the study described in this report was conducted in compliance with the following Good Laboratory Practice standards and I consider the data generated to be valid.

The UK Good Laboratory Practice Regulations 1999 (Statutory Instrument 1999 No. 3106, as amended by Statutory Instrument 2004 No. 994).

OECD Principles of Good Laboratory Practice (as revised in 1997), ENV/MC/CHEM(98)17.

EC Commission Directive 1999/11/EC of 8 March 1999 (Official Journal No. L 77/8), as amended by EC Commission Directive 2004/10/EC of 11 February 2004 (Official Journal No. L 50/44).

US EPA 79.64, CFR Vol. 59, No. 122, 27 June 1994.

No compliance is claimed for work presented in the Experimental Procedure – In-life phase or Appendix 2 of this report.

Lincoln Pritchard, B.Sc. (Hons.),
Principal Investigator,
Huntingdon Life Sciences Ltd.

10 November 2009
Date

I am claiming compliance for the whole study. This study was performed according to protocol and Standard Operating Procedure 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.

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

27 Jan 10
Date

ERC - QUALITY ASSURANCE STATEMENT

The following inspections and audits have been carried out in relation to the slide evaluation phase this study:

Study Phase	Date of Inspection	Date of Reporting to Principal Investigator and Test Site Management	Date of Reporting to Study Director, Test Facility Management and Lead QA
Process Based			
Slide scoring	18 July 2001	18 July 2001	-
Report Audit	12 November 2001 28 July - 3 August 9 November 2009	12 November 2001 3 August 2004 9 November 2009	19 December 2001 3 August 2004 9 November 2009

Process Based Inspections: At or about the time this phase of the study was in progress, inspections of routine and repetitive procedures employed on this type of study were carried out. These were conducted and reported to appropriate Company Management as indicated above.

Report Audit: This appendix has been audited by the Quality Assurance Department. These audits were conducted and reported to the Principal Investigator, test site Management, Study Director, test facility Management and lead Quality Assurance Department as indicated above.

Study based inspections were not performed on this phase of the study.

The methods, procedures and observations were found to be accurately described and the reported results of this appendix to reflect the raw data.

Helen Comb, B.Sc., M.R.Q.A.,
Unit Head,
Department of Quality Assurance,
Huntingdon Life Sciences Ltd.

10 November 2009
Date

PRC - 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
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

RESPONSIBLE PERSONNEL AND SCIENTIFIC APPROVAL

Gary M. Hoffman, B.A., D.A.B.T.,
Study Director
Department of Safety Assessment, PRC.

27 Jan 10
Date

Lincoln Pritchard, B.Sc. (Hons.),
Principal Investigator
Department of Genetic Toxicology, ERC

10 November 2009
Date

SUMMARY

This satellite micronucleus study was designed to assess the potential induction of micronuclei by Gasoline Ethanol Vapor Condensate in bone marrow cells of the rat. Animals were exposed for four weeks (5 days per week) by inhalation administration of the test substance at exposure levels of 2000, 10000 and 20000 mg/m^3.

The test substance and negative control were administered by inhalation. The negative control group received clean air. A positive control group was dosed on one occasion by intraperitoneal injection, with cyclophosphamide at 40 mg/kg bodyweight.

Bone marrow smears were obtained from five male and five female animals in the negative control and each of the test substance groups 24 hours after the 20th exposure and from the positive control group 24 hours after dosing. One smear from each animal was examined for the presence of micronuclei in 2000 immature erythrocytes. The proportion of immature erythrocytes was assessed by examination of at least 1000 erythrocytes from each animal. A record of the incidence of micronucleated mature erythrocytes was also kept.

The test substance did not cause any statistically significant increases in the number of micronucleated immature erythrocytes in female animals. A statistically significant increase was recorded in male animals using the trend test when all four groups (groups 1 to 4) were included ($P<0.01$). The trend test was not statistically significant when the data from group 4 was excluded. This significance was not considered to be of biological relevance for the following reasons:

- Individual and group mean values were within the historical negative control range for all dose groups.
- Statistical significance was enhanced by the low values recorded in the negative control animals.

No statistically significant increases were recorded when data from both sexes was combined.

No substantial decrease in the proportion of immature erythrocytes was observed in rats treated with Gasoline Ethanol Vapor Condensate compared to negative control values.

The positive control compound, Cyclophosphamide, produced large significant increases in the frequency of micronucleated immature erythrocytes and a decrease in the proportion of immature erythrocytes ($P<0.001$).

It is concluded that Gasoline Ethanol Vapor Condensate did not show any evidence of causing chromosome damage or bone marrow cell toxicity when administered by inhalation exposure in this *in vivo* test procedure

INTRODUCTION

The purpose of this satellite micronucleus study was to assess the potential of Gasoline Ethanol Vapor Condensate to induce mutagenic effects in rats following inhalation administration using an *in vivo* cytogenetic system (Boller and Schmid 1970, MacGregor *et al* 1987, Mavournin *et al* 1990). The inhalation route was selected for use in this test as the most likely route of human exposure.

The procedures used were based on the recommendations of the following guidelines:

- US EPA Micronucleus Assay 79.64, CFR Vol. 59, No. 122, 27 June 1994.
- US EPA (1998) Health Effects Test Guidelines; OPPTS 870.5395 Mammalian Erythrocyte Micronucleus Test.

The bone marrow micronucleus test, originally developed by Matter and Schmid (1971), is a widely employed and internationally accepted short-term assay for identification of genotoxic effects (chromosome damage and aneuploidy) associated with mutagens and carcinogens (Mavournin *et al* 1990). This *in vivo* system allows consideration of various factors including pharmacokinetics, metabolism and DNA repair which cannot be accurately modelled in an *in vitro* system. Young adult rats are chosen for use because of the high rate of cell division in the bone marrow, because of the wealth of background data on this species, and because of their general suitability for toxicological investigations.

In mitotic cells in which chromosomal breakage has been caused by the test substance or its metabolites, acentric fragments of the chromosomes do not separate at the anaphase stage of cell division. After telophase these fragments may not be included in the nuclei of the daughter cells and hence will form single or multiple micronuclei (Howell-Jolly bodies) in the cytoplasm of these cells. Micronuclei are seen in a wide variety of cells, but erythrocytes are chosen for examination since micronuclei are not obscured by the main nucleus and are therefore easily detected in this cell type (Boller and Schmid 1970).

Micronucleated immature erythrocytes appear in the bone marrow approximately 24 hours after induction of chromosome damage. These immature erythrocytes can be differentiated by a variety of staining techniques which rely on their relatively high content of residual RNA. Using the Feulgen method, they stain blue while mature erythrocytes (which contain little RNA) are counterstained orange. An increased incidence of micronucleated immature erythrocytes is indicative of recent exposure to a chromosome-damaging agent. A simultaneous marked increase in the incidence of micronucleated mature erythrocytes is not expected and may be indicative of micronucleus-like artifacts (Schmid 1976).

Substances which interfere with the mitotic spindle apparatus will cause non-disjunction (unequal separation of the chromosomes at anaphase resulting in aneuploidy) or lagging chromosomes at anaphase which may not be incorporated into the daughter nuclei. These lagging chromosomes are not excluded from the erythroblast with the main nucleus and hence also give rise to micronuclei.

Any toxic effects of the test substance on the nucleated cells may lead either to a reduction in cell division or to cell death. These effects in turn lead to a reduction in the number of nucleated cells and immature erythrocytes; to compensate for this, peripheral blood is shunted into the bone marrow (von Ledebur and Schmid 1973). If the proportion of immature erythrocytes is found to be significantly less than the control value, this is taken as being indicative of toxicity. A very large decrease in the proportion would be indicative of a cytostatic or cytotoxic effect.

The slide evaluation phase of the satellite micronucleus study was performed at the Department of Genetic Toxicology, Huntingdon Life Sciences (ERC), Eye, Suffolk, IP23 7PX, England. Subsequently statistical analysis was performed by the Department of Statistics, Huntingdon Life Sciences (HRC), Huntingdon, Cambridgeshire, PE28 4HS, England.

The experimental start and completion dates of the slide evaluation phase of the study were 30 May 2001 and 7 September 2001, respectively.

EXPERIMENTAL PROCEDURE

In-life phase

The in-life phase of the study was carried out at the Princeton Research Center starting on 19 April 2001 and was completed on 17 May 2001.

All animals in the negative control and test substance groups were exposed for four weeks (5 days per week) by inhalation. The non-exposed positive control group was dosed with Cyclophosphamide administered on one occasion by intraperitoneal injection at a volume dosage of 10 ml/kg bodyweight. Cyclophosphamide (CP, CAS # 6055-19-2, lot number 108H0568, received 15 May 2001, expiration 30 June 2001, white powder, storage 2-8°C, purity 99.2%), was obtained from the Sigma Chemical Company (responsible for its characterization), and was dissolved and diluted in sterile distilled water at Huntingdon Life Sciences to stock concentrations of 4.0 mg/mL for use as the positive control for the micronucleus study.

The experimental design is shown below:

Group	Treatment	Exposure Level (mg/m^3)	Animal Numbers	
			Male	Female
1	Air control	-	1031 - 1035	1541 – 1545
2	Test Substance	2000	2021 - 2025	2531 – 2535
3	Test Substance	10000	3021 - 3025	3531 – 3535
4	Test Substance	20000	4031 – 4035	4541 – 4545
6	Cyclophosphamide	40 (mg/kg)	6031 – 6035	6541 - 6545

Five males and five females from the negative control and each of the test substance groups were sacrificed 24 hours after the final exposure period by CO_2 asphyxiation. Five males and five females from the positive control group were sacrificed 24 hours after CP dosing by CO_2 asphyxiation. Both femurs were exposed, cut just above the knee and the bone marrow was aspirated into a syringe containing a small volume (about 0.5 mL) of serum. The cells were then flushed into a centrifuge tube of cold serum. The tubes were identified by labels containing the study, group number, and animal number.

The bone marrow cells were pelleted by centrifugation at about 150 x g for approximately 5 minutes and the supernatant drawn off, leaving a small amount of serum with the cell pellet. The cells were resuspended by aspiration with a pasteur pipette and a small drop of cells was spread onto a clean glass slide. Four slides were prepared from each animal. The slides were allowed to air dry, fixed by dipping for about 3 minutes in methanol, and aged overnight or longer prior to staining. Slides were labelled with experiment and animal number using a lead pencil.

Two slides from each animal were despatched to Huntingdon Life Sciences (ERC), Eye, Suffolk, IP23 7PX, England for slide staining and analysis. The remaining 2 smears and the cell pellet (refrigerated) were held in reserve at PRC in case of technical problems with the first 2 smears.

Slide evaluation

Due to the presence of mast cell granules in rat bone smears, which appear identical to micronuclei when stained using the Romanowsky methods, a modified Feulgen staining method is employed for the rat micronucleus test in this laboratory. This method specifically stains DNA-containing bodies deep purple while leaving mast cell granules unstained. The method also allows reasonable differentiation of mature and immature erythrocytes and produces permanent preparations.

One slide from each animal was stained as follows, the remaining slide was held in reserve:

1. Hydrolysed in Bouin's fluid at room temperature for approximately 30 hours.
2. Washed three times in purified water (5 minutes per wash).
3. Stained in Schiff's reagent for one hour at room temperature.
4. Washed three times in purified water (5 minutes per wash).
5. Counter-stained for ten minutes in very dilute (approximately 0.06 g/l) aqueous Eosin yellowish.
6. Washed for five minutes in purified water.
7. Stained for 30 minutes in Mayer's Haemalum diluted 9 volumes: 1 volume with aqueous acridine orange solution in purified water (1 mg/ml).
8. Rinsed in purified water.
9. Rinsed in running tap water.
10. Washed for 5 minutes in purified water.
11. Air-dried.
12. Slides were mounted with coverslips using DPX mountant.
13. The mountant was allowed to harden at approximately 37°C.

NB All stains and Bouin's fluid were filtered immediately prior to use to remove particulate material.

The stained smears were examined (under code) by light microscopy to determine the incidence of micronucleated cells per 2000 polychromatic erythrocytes per animal. One smear per animal was examined. The remaining smears were held temporarily in reserve in case of technical problems with the first smear.

Micronuclei are identified by the following criteria:

- Large enough to discern morphological characteristics
- Should possess a generally rounded shape with a clearly defined outline
- Should be deeply stained and similar in colour to the nuclei of other cells - not black
- Should lie in the same focal plane as the cell

- Lack internal structure, *ie* they are pyknotic
- There should be no micronucleus-like debris in the area surrounding the cell

The proportion of immature erythrocytes for each animal was assessed by examination of at least 1000 erythrocytes. A record of the number of micronucleated mature erythrocytes observed during assessment of this proportion was also kept as recommended by Schmid (1976).

Deviation from Protocol

The statistical analysis was performed at Huntingdon Life Sciences Ltd., Huntingdon Cambridgeshire, PE28 4HS, England.

Assessment of Results

The results for each treatment group were compared with the results for the negative control group for the entire study using non-parametric statistics. Non-parametric statistical methods were chosen for analysis of results because:

- They are suited to analysis of data consisting of discrete/integer values with ties such as the incidence of micronucleated immature erythrocytes.
- The methods make few assumptions about the underlying distribution of data and therefore the values do not require transformation to fit a theoretical distribution (where data can be approximately fitted to a normal distribution, the results of non-parametric analysis and classical analysis of variance are very similar).
- 'Outliers' are frequently found in the proportion of immature erythrocytes for both control and treated animals; non-parametric analysis based on rank does not give these values an undue weighting.

For incidences of micronucleated immature erythrocytes, exact one-sided p-values are calculated by permutation (StatXact, CYTEL Software Corporation, Cambridge, Massachussetts). Comparison of several dose levels is made with the negative control using the Linear by Linear Association test for trend, in a step-down fashion if significance is detected (Agresti *et al.* 1990); for individual inter-group comparisons (*ie* the positive control group) this procedure simplifies to a straightforward permutation test (Gibbons 1985). For assessment of effects on the proportion of immature erythrocytes, equivalent permutation tests based on rank scores are used, *ie* exact versions of Wilcoxon's sum of ranks test and Jonckheere's test for trend.

A positive response is normally indicated by a statistically significant dose-related increase in the incidence of micronucleated immature erythrocytes for the treatment group compared with the negative control group ($P<0.01$); individual and/or group mean values should exceed the laboratory historical control range (Morrison and Ashby 1995).

A negative result is indicated where individual and group mean incidences of micronucleated immature erythrocytes for the group treated with the test substance are not significantly greater than incidences for the negative control group and where these values fall within the historical control range. An equivocal response is obtained when the results do not meet the criteria specified for a positive or negative response.

Bone marrow cell toxicity (or depression) is normally indicated by a substantial and statistically significant dose-related decrease in the proportion of immature erythrocytes ($P<0.01$).

MAINTENANCE OF RECORDS

All raw data, samples and specimens arising from the performance of this phase of the study will remain the property of the Sponsor.

Types of sample and specimen that are unsuitable, by reason of instability, for long term retention and archiving may be disposed after the periods stated in Huntingdon Life Sciences, Standard Operating Procedures.

All other samples and specimens and all raw data will be retained by Huntingdon Life Sciences PRC in its archive for a period of one year from the date on which the Study Director signs the final report. After such time, the Sponsor will be contacted and their advice sought on the return, disposal or further retention of the materials. If requested, Huntingdon Life Sciences will continue to retain the materials subject to a reasonable fee being agreed with the Sponsor.

Huntingdon Life Sciences will retain the Quality Assurance records relevant to this study and a copy of the final report in its archive indefinitely.

RESULTS

MICRONUCLEUS TEST

Statistical analysis was performed on the combined sex data and on male and female data separately. Table 1 gives a summary of the results of the micronucleus test and the results of statistical analysis. The results for individual animals are presented in Table 2. Appendix 1 summarises the historical control data for micronucleated immature erythrocyte counts.

Micronucleated immature erythrocyte counts (mie)

The test substance did not cause any statistically significant increases in the number of micronucleated immature erythrocytes in female animals. A statistically significant increase was recorded in male animals using the Trend test when all four groups (groups 1 to 4) were included ($P<0.01$). The trend test was not statistically significant when the data from group 4 was excluded. This significance was not considered to be of biological relevance for the following reasons:

Individual and group mean values were within the historical negative control range for all groups.

Statistical significance was enhanced by the low values recorded in the negative control animals.

No statistically significant increases were recorded when data from both sexes was combined.

Cyclophosphamide caused large significant increases in the frequency of micronucleated immature erythrocytes.

Micronucleated mature erythrocytes (mme)

The test substance did not cause any substantial increases in the incidence of micronucleated mature erythrocytes in either sex.

Proportion of immature erythrocytes

The test substance failed to cause any significant decreases in the proportion of immature erythrocytes.

Cyclophosphamide caused statistically significant decreases in the proportion.

CONCLUSION

Gasoline Ethanol Vapor Condensate did not show any evidence of causing chromosome damage or bone marrow cell toxicity when administered by inhalation in this *in vivo* test procedure.

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TABLE 1: SUMMARY OF RESULTS AND STATISTICAL ANALYSIS

Summary of results and statistical analysis

Sampling time	Treatment	Exposure level (mg/m^3)	Proportion of ie † (group mean ± SD)	Incidence mie (group mean ± SD)	Incidence mme (group mean ± SD) [a/c]
24 Hours	Negative control	-	45±4.2	0.1±0.3	0.3±0.3
	TS	2000	40±5.6	0.4±0.8	0.6±0.4
	TS	10000	43±3.1	0.1±0.3	0.3±0.3
	TS	20000	43±6.3	0.8±1.0	0.7±0.6
	Cyclophosphamide	40 mg/kg	33±3.1***	11.1±5.5***	1.4±0.5

TS Gasoline Ethanol Vapor Condensate
ie Immature erythrocytes
mie Number of micronucleated cells observed per 2000 immature erythrocytes examined
me Mature erythrocytes
mme Number of micronucleated cells observed and calculated per 2000 mature erythrocytes
SD Standard deviation

Results of statistical analysis using the appropriate nonparametric method of analysis based on permutation (one-sided probabilities):

*** $P < 0.001$ (significant)
otherwise $P > 0.01$ (not significant)

† Occasional apparent errors of ± 1% may occur due to rounding of values for presentation in the table

a Formula for calculation of incidence **mme** (group mean):

$$\frac{\text{Sum of group incidence } \textbf{mme} \text{ scored} \times 2000}{\text{Sum of group } \textbf{me} \text{ scored}}$$

c Standard deviation **mme** calculated using actual individual values.

TABLE 1 - continued

Summary of results and statistical analysis – separate sexes

Sampling time	Treatment	Exposure level (mg/m^3)	Proportion of ie † (group mean ± SD)	Incidence mie (group mean ± SD)	Incidence mme (group mean ± SD) [a/c]
			MALES		
24 hours	Negative control	-	46±2.7	0.0±0.0	0.7±0.4
	TS	2000	41±5.2	0.0±0.0	0.0±0.0
	TS	10000	43±2.3	0.2±0.4 [b]	0.6±0.4
	TS	20000	46±3.1	0.6±0.5	0.0±0.0
	Cyclophosphamide	40 (mg/kg)	33±3.5**	14.2±5.3**	1.6±0.5
			FEMALES		
24 hours	Negative control	-	44±5.4	0.2±0.4	0.0±0.0
	TS	2000	39±6.5	0.8±1.1	1.2±0.5
	TS	10000	44±3.9	0.0±0.0	0.0±0.0
	TS	20000	40±7.3	1.0±1.4	1.3±0.9
	Cyclophosphamide	40 (mg/kg)	34±2.9**	8.0±3.9**	1.1±0.5

TS Gasoline MTBE Vapor Condensate
ie Immature erythrocytes
mie Number of micronucleated cells observed per 2000 immature erythrocytes examined
me Mature erythrocytes
mme Number of micronucleated cells observed and calculated per 2000 mature erythrocytes
SD Standard deviation

Results of statistical analysis using the appropriate nonparametric method of analysis based on permutation (one-sided probabilities):

** $P < 0.01$ (significant)
otherwise $P > 0.01$ (not significant)

b Significant in the trend test when all four groups included ($P<0.01$).

† Occasional apparent errors of ± 1% may occur due to rounding of values for presentation in the table

a Formula for calculation of incidence **mme** (group mean):

$$\frac{\text{Sum of group incidence } \textbf{mme} \text{ scored} \times 2000}{\text{Sum of group } \textbf{me} \text{ scored}}$$

c Standard deviation **mme** calculated using actual individual values.

TABLE 2: RESULTS FOR INDIVIDUAL ANIMALS – 24 HOUR SAMPLING TIME

Treatment	Exposure (mg/m^3)	Animal number	ie	me	Proportion of ie	Incidence mie	Incidence mme
Negative control (air)	-	M 1031	528	552	49	0	0
		M 1032	547	594	48	0	0
		M 1033	427	592	42	0	0
		M 1034	473	564	46	0	0
		M 1035	524	586	47	0	1
		F 1541	404	603	40	0	0
		F 1542	499	533	48	1	0
		F 1543	478	553	46	0	0
		F 1544	429	759	36	0	0
		F 1545	542	593	48	0	0
TS	2000	M 2021	511	565	47	0	0
		M 2022	379	702	35	0	0
		M 2023	465	591	44	0	0
		M 2024	421	609	41	0	0
		M 2025	395	692	36	0	0
		F 2531	309	743	29	0	1
		F 2532	494	559	47	2	0
		F 2533	411	694	37	2	1
		F 2534	422	615	41	0	0
		F 2535	473	648	42	0	0
TS	10000	M 3021	478	659	42	0	0
		M 3022	453	594	43	0	0
		M 3023	503	587	46	0	0
		M 3024	415	629	40	1	1
		M 3025	440	609	42	0	0
		F 3531	463	621	43	0	0
		F 3532	402	624	39	0	0
		F 3533	511	521	50	0	0
		F 3534	492	574	46	0	0
		F 3535	447	599	43	0	0
TS	20000	M 4031	457	629	42	1	0
		M 4032	593	609	49	0	0
		M 4033	523	574	48	1	0
		M 4034	499	531	48	0	0
		M 4035	447	572	44	1	0
		F 4541	408	621	40	2	0
		F 4542	516	557	48	0	0
		F 4543	407	606	40	3	2
		F 4544	454	601	43	0	0
		F 4545	298	759	28	0	0

TS Gasoline Ethanol Vapor Condensate
ie Immature erythrocytes
mie Number of micronucleated cells observed per 2000 immature erythrocytes
me Total number of mature erythrocytes examined for micronuclei
mme Number of micronucleated mature erythrocytes observed

TABLE 2 - continued

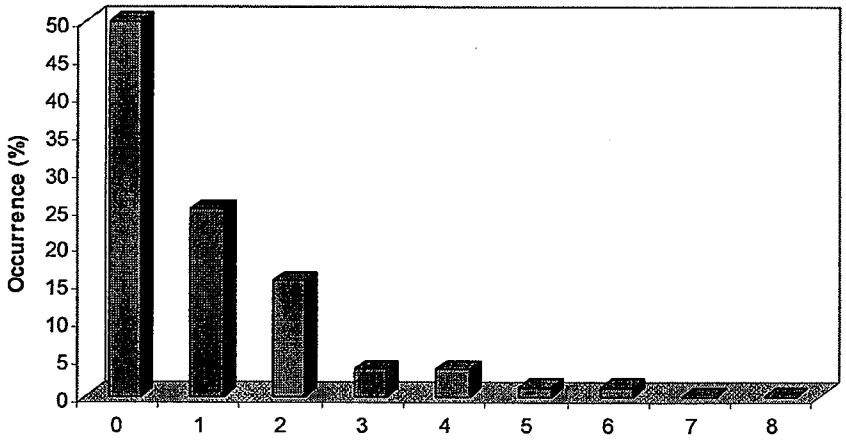
Results for individual animals - 24 hour sampling time

Treatment	Dosage (mg/kg)	Animal number	ie	me	Proportion of ie	Incidence mie	Incidence mme
Cyclophosphamide	40	M 6031	411	719	36	17	1
		M 6032	394	693	36	11	0
		M 6033	317	792	29	22	0
		M 6034	351	790	31	12	1
		M 6035	328	729	31	9	1
		F 6541	357	649	35	10	1
		F 6542	331	702	32	5	0
		F 6543	367	723	34	14	1
		F 6544	394	659	37	6	0
		F 6545	324	759	30	5	0

ie Immature erythrocytes
mie Number of micronucleated cells observed per 2000 immature erythrocytes
me Total number of mature erythrocytes examined for micronuclei
mme Number of micronucleated mature erythrocytes observed

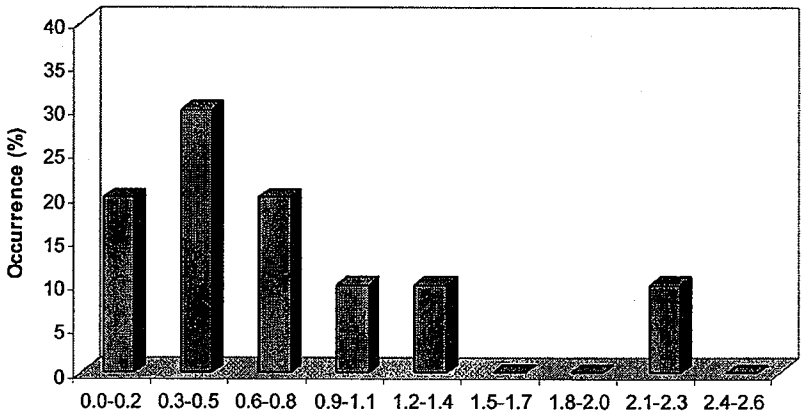
APPENDIX 1: HISTORICAL CONTROL DATA

Historical negative control values (1 February 1999 - 31 January 2001)
Frequency of micronucleated immature erythrocytes (individual animals)



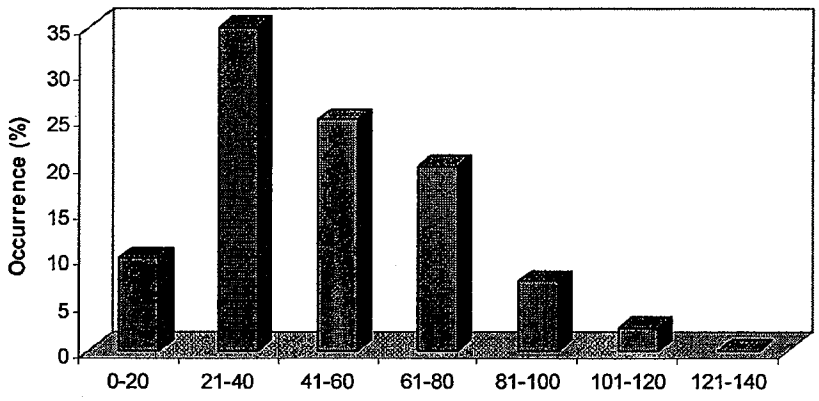
Number of micronucleated immature erythrocytes (MIE per 2000)
Individual mean 0.94

Historical negative control values (1 February 1999 - 31 January 2001)
Frequency of micronucleated immature erythrocytes (Group mean values)



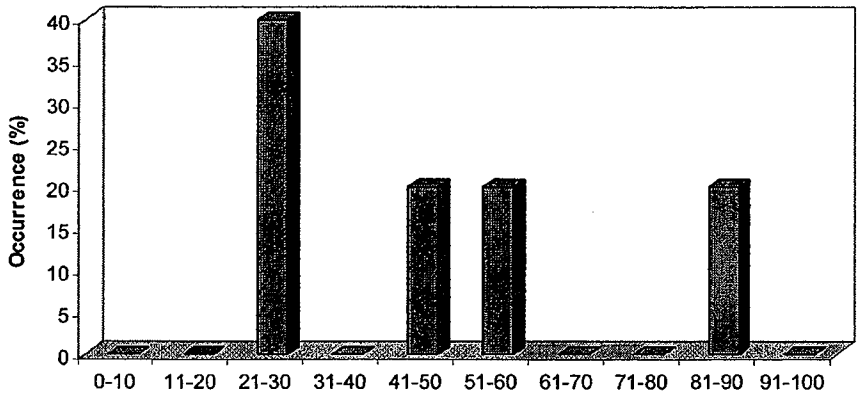
Number of micronucleated immature erythrocytes (MIE per 2000)
Group mean 0.71

Historical positive control values (1 February 1999 - 31 January 2001)
Frequency of micronucleated immature erythrocytes (Individual animals)
Cyclophosphamide



Number of micronucleated immature erythrocytes (MIE per 2000 cells)
Individual mean 48.03

Historical positive control values (1 February 1999 - 31 January 2001)
Frequency of micronucleated immature erythrocytes (Group mean values)
Cyclophosphamide



Number of micronucleated immature erythrocytes (MIE per 2000)
Group mean 49.2

APPENDIX 2: GLP COMPLIANCE STATEMENTS

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE UNITED KINGDOM

GOOD LABORATORY PRACTICE

STATEMENT OF COMPLIANCE
IN ACCORDANCE WITH DIRECTIVE 88/320 EEC

LABORATORY	TEST TYPE
Huntingdon Life Sciences **Eye Research Centre** **Eye** **Suffolk** **IP23 7PX**	**Analytical Chemistry** **Clinical Chemistry** **Ecosystems** **Environmental Fate** **Environmental Toxicity** **Mutagenicity** **Phys/Chem Testing** **Toxicology**

DATE OF INSPECTION

29th January 2001

A general inspection for compliance with the Principles of Good Laboratory Practice was carried out at the above laboratory as part of UK GLP Compliance Programme.

At the time of the inspection no deviations were found of sufficient magnitude to affect the validity of non-clinical studies performed at these facilities.

Roger J. Alexander
3/4/01

Dr. Roger G. Alexander
Head, UK GLP Monitoring Authority

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE UNITED KINGDOM

GOOD LABORATORY PRACTICE

STATEMENT OF COMPLIANCE
IN ACCORDANCE WITH DIRECTIVE 88/320 EEC

LABORATORY	TEST TYPE
Huntingdon Life Sciences **Huntingdon Research Centre** **Wooley Road** **Alconbury** **Huntingdon** **Cambs.** **PE28 4HS**	**Analytical Chemistry** **Clinical Chemistry** **Ecosystems** **Environmental Fate** **Environmental Toxicity** **Phys/Chem Testing** **Toxicology**

DATE OF INSPECTION
15th January 2001

A general inspection for compliance with the Principles of Good Laboratory Practice was carried out at the above laboratory as part of UK GLP Compliance Programme.

At the time of the inspection no deviations were found of sufficient magnitude to affect the validity of non-clinical studies performed at these facilities.

Roger G. Alexander
3/4/01

Dr. Roger G. Alexander
Head, UK GLP Monitoring Authority

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE UNITED KINGDOM

GOOD LABORATORY PRACTICE

STATEMENT OF COMPLIANCE
IN ACCORDANCE WITH DIRECTIVE 88/320 EEC

LABORATORY	TEST TYPE
Huntingdon Life Sciences **Eye Research Centre** **Occold** **Eye** **Suffolk** **IP23 7PX**	**Analytical Chemistry** **Ecosystems** **Environmental Fate** **Environmental Toxicity** **Mutagenicity** **Toxicology** **Phys/Chem Tests**

DATE OF INSPECTION
22nd April 2003

A general inspection for compliance with the Principles of Good Laboratory Practice was carried out at the above laboratory as part of UK GLP Compliance Programme.

At the time of the inspection no deviations were found of sufficient magnitude to affect the validity of non-clinical studies performed at these facilities.

Roger G. Alexander
25/7/03

Dr. Roger G. Alexander
Head, UK GLP Monitoring Authority

DH Department of Health

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE UNITED KINGDOM

GOOD LABORATORY PRACTICE

STATEMENT OF COMPLIANCE IN ACCORDANCE WITH DIRECTIVE 2004/9/EC

LABORATORY

Huntingdon Life Sciences
Eye Research Centre
Occold
Eye
Suffolk
IP23 7PX

TEST TYPE

Analytical Chemistry
Clinical Chemistry
Ecosystems
Environmental Fate
Environmental Toxicity
Mutagenicity
Toxicology
Phys/Chem Testing

DATE OF INSPECTION

12th April 2005

A general inspection for compliance with the Principles of Good Laboratory Practice was carried out at the above laboratory as part of the UK GLP Compliance Programme.

At the time of inspection no deviations were found of sufficient magnitude to affect the validity of non-clinical studies performed at these facilities.

Bryan J. Wright 9/6/05

Mr. Bryan J. Wright
Head, UK GLP Monitoring Authority

Department of Health

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE UNITED KINGDOM

GOOD LABORATORY PRACTICE

STATEMENT OF COMPLIANCE IN ACCORDANCE WITH DIRECTIVE 2004/9/EC

TEST FACILITY

Huntingdon Life Sciences
Eye Research Centre
Occold
Eye
Suffolk
IP23 7PX

TEST TYPE

Analytical Chemistry
Ecosystems
Environmental Fate
Environmental Toxicity
Mutagenicity
Phys/Chem Testing
Toxicology

DATE OF INSPECTION

28th January 2008

A general inspection for compliance with the Principles of Good Laboratory Practice was carried out at the above test facility as part of the UK GLP Compliance Programme.

At the time of inspection no deviations were found of sufficient magnitude to affect the validity of non-clinical studies performed at these facilities.

4/03/08

Dr. Andrew J. Gray
Head, UK GLP Monitoring Authority

MHRA

Department of Health

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE UNITED KINGDOM

GOOD LABORATORY PRACTICE

STATEMENT OF COMPLIANCE IN ACCORDANCE WITH DIRECTIVE 2004/9/EC

TEST FACILITY	TEST TYPE
Huntingdon Life Sciences Eye Research Centre Occold Eye Suffolk IP23 7PX	Analytical/Clinical Chemistry Ecosystems Environmental Fate Environmental Toxicity Mutagenicity Phys/Chem Testing Toxicology

DATE OF INSPECTION

17-19 February 2009

A general inspection for compliance with the Principles of Good Laboratory Practice was carried out at the above test facility as part of the UK GLP Compliance Programme.

At the time of inspection no deviations were found of sufficient magnitude to affect the validity of non-clinical studies performed at these facilities.

1/5/09

Dr. Andrew J. Gray
Head, UK GLP Monitoring Authority

APPENDIX 3: ANIMAL EXPOSURE AND OBSERVATIONS DATA

	Animal Exposure and Animal Data Preface	Appendix 3

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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TABLES

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 IA - 0 mg/m³ (Air Control)

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
			Nominal	Mean	Individual				MMAD	GSD	TMC	Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)				(μm)		(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

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 IB - 0 mg/m^3 (Air Control)

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment	
			Nominal	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	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

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 IIA - 2,000 mg/m^3

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment	
			Nominal	Mean	Individual				MMAD	GSD	TMC	Mean Temperature	Mean 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

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 IIB - 2,000 mg/m^3

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
			Nominal	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	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

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 IIIA - 10,000 mg/m³

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
			Nominal	Mean	Individual				MMAD	GSD	TMC	Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)				(μm)		(mg/m³)	(°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

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 IIIB - 10,000 mg/m³

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
			Nominal	Mean	Individual				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

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 IVA - 20,000 mg/m^3

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
			Nominal	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	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	25855		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 - 20,000 mg/m³

Day	Date	Exposure Number	Analytical Chamber Concentration						Particle Size Determinations			Chamber Environment Mean	
			Nominal	Mean	Individual				MMAD	GSD	TMC	Temperature	Humidity
			(mg/m³)	(mg/m³)	(mg/m³)				(μm)		(mg/m³)	(°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	25855		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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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	
	6	5	
NORMAL			
WITHIN NORMAL LIMITS	1	5	5
	2	5	5
	3	5	5
	4	5	5
	6	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	
	6	5	
NORMAL			
WITHIN NORMAL LIMITS	1	5	5
	2	5	5
	3	5	5
	4	5	5
	6	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	VI
	EXPOSURE LEVEL (mg/m3):	0	2,000	10,000	20,000	MICRO+CONTROL
WEEK -1	MEAN	154	154	153	154	154
	S.D.	6.3	6.9	6.8	6.5	7.3
	N	5	5	5	5	5
WEEK 0	MEAN	220	229	230	228	226
	S.D.	11.2	7.3	9.0	8.2	7.5
	N	5	5	5	5	5
WEEK 1	MEAN	269	283	277	277	278
	S.D.	16.3	12.6	15.1	17.5	10.7
	N	5	5	5	5	5
WEEK 2	MEAN	299	318	313	307	312
	S.D.	23.4	16.6	19.0	25.3	15.8
	N	5	5	5	5	5
WEEK 3	MEAN	331	358	345	345	344
	S.D.	29.6	14.7	17.5	32.8	15.1
	N	5	5	5	5	5
WEEK 4	MEAN	365	389	376	375	374
	S.D.	34.2	14.6	23.5	34.3	14.5
	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	VI
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	MICRO+CONTROL
WEEK -1	MEAN	135	135	137	135	135
	S.D.	6.3	6.9	5.5	6.3	7.8
	N	5	5	5	5	5
WEEK 0	MEAN	173	177	176	179	176
	S.D.	13.9	7.1	10.8	12.2	14.2
	N	5	5	5	5	5
WEEK 1	MEAN	195	201	198	204	201
	S.D.	18.3	10.8	11.0	16.2	14.3
	N	5	5	5	5	5
WEEK 2	MEAN	214	218	219	225	219
	S.D.	22.9	10.8	17.9	23.5	13.1
	N	5	5	5	5	5
WEEK 3	MEAN	226	233	229	245	235
	S.D.	26.3	7.6	15.4	31.0	16.2
	N	5	5	5	5	5
WEEK 4	MEAN	239	246	242	258	245
	S.D.	27.7	12.6	24.0	33.2	15.3
	N	5	5	5	5	5

No statistically significant differences

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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	VI
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	MICRO+CONTROL
WEEK 0 TO 1	MEAN	48	54	47	49	52
	S.D.	5.6	5.4	7.3	12.2	4.2
	N	5	5	5	5	5
WEEK 0 TO 2	MEAN	79	89	83	79	86
	S.D.	13.5	10.8	10.9	21.2	10.7
	N	5	5	5	5	5
WEEK 0 TO 3	MEAN	111	129	115	117	117
	S.D.	19.4	8.5	9.4	28.7	11.4
	N	5	5	5	5	5
WEEK 0 TO 4	MEAN	144	161	146	147	148
	S.D.	23.7	8.1	15.9	30.8	12.2
	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

FEMALES — MEAN BODY WEIGHT CHANGE (GRAMS)

DOSE GROUP:		I	II	III	IV	VI
EXPOSURE LEVEL (mg/m3):		0	2,000	10,000	20,000	MICRO+CONTROL
WEEK 0 TO 1	MEAN	22	24	22	25	25
	S.D.	6.8	5.0	2.4	7.6	6.0
	N	5	5	5	5	5
WEEK 0 TO 2	MEAN	41	41	43	46	43
	S.D.	10.6	4.8	8.6	12.0	9.4
	N	5	5	5	5	5
WEEK 0 TO 3	MEAN	53	56	53	66	59
	S.D.	13.2	6.1	9.0	19.1	15.4
	N	5	5	5	5	5
WEEK 0 TO 4	MEAN	66	70	66	79	69
	S.D.	14.7	7.0	19.2	21.0	12.1
	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	VI
	EXPOSURE LEVEL (mg/m3):	0	2,000	10,000	20,000	MICRO+CONTROL
WEEK 0	MEAN	108	115	114	117	118
	S.D.	4.2	4.7	10.9	5.0	5.0
	N	5	5	5	5	5
WEEK 1	MEAN	95	100	100	97	103
	S.D.	3.3	2.8	5.7	5.3	5.1
	N	5	5	5	5	5
WEEK 2	MEAN	82	86	85	83	89
	S.D.	4.9	1.9	2.8	4.6	5.8
	N	5	5	5	5	5
WEEK 3	MEAN	74	78	77	77	80
	S.D.	3.2	2.0	3.5	4.3	4.8
	N	5	5	4	5	5
WEEK 4	MEAN	70	71	75	71	74
	S.D.	3.1	2.3	5.7	2.2	4.4
	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

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

DOSE GROUP:			I	II	III	IV	VI
EXPOSURE LEVEL (mg/m3):			0	2,000	10,000	20,000	MICRO+CONTROL
WEEK	0	MEAN	105	109	110	113	109
		S.D.	9.0	10.0	2.3	5.6	9.1
		N	5	5	5	5	5
WEEK	1	MEAN	91	94	97	105**	102*
		S.D.	5.8	4.9	2.5	11.6	3.7
		N	5	5	5	5	5
WEEK	2	MEAN	88	92	91	93	93
		S.D.	6.0	5.7	4.6	3.8	3.5
		N	5	5	5	5	5
WEEK	3	MEAN	83	85	83	85	88*
		S.D.	3.0	3.8	1.5	1.1	1.9
		N	5	4	5	4	4
WEEK	4	MEAN	76	83	85	80	83
		S.D.	4.5	3.8	1.9	1.7	6.6
		N	3	5	5	5	5

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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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 VI MICRO+CONTROL

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
6031	WITHIN NORMAL LIMITS		P
6032	WITHIN NORMAL LIMITS		P
6033	WITHIN NORMAL LIMITS		P
6034	WITHIN NORMAL LIMITS		P
6035	WITHIN NORMAL LIMITS		P

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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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 VI MICRO+CONTROL

ANIMAL#	OBSERVATIONS	DAY OF STUDY	- 1 0
6541	WITHIN NORMAL LIMITS		P
6542	WITHIN NORMAL LIMITS		P
6543	WITHIN NORMAL LIMITS		P
6544	WITHIN NORMAL LIMITS		P
6545	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

	WEEK OF STUDY					
ANIMAL#	-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

	WEEK OF STUDY					
ANIMAL#	-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

	WEEK OF STUDY					
ANIMAL#	-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 VI MICRO+CONTROL

	WEEK OF STUDY					
ANIMAL#	-1	0	1	2	3	4
6031	157	223	271	306	330	357
6032	158	231	288	334	368	397
6033	143	221	269	294	336	371
6034	161	237	291	323	349	377
6035	150	219	271	304	336	369
MEAN	154	226	278	312	344	374
S.D.	7.3	7.5	10.7	15.8	15.1	14.5
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)

FEMALES GROUP I 0 mg/m3

	WEEK OF STUDY					
ANIMAL#	-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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

	WEEK OF STUDY					
ANIMAL#	-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

	WEEK OF STUDY					
ANIMAL#	-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 VI MICRO+CONTROL

	WEEK OF STUDY					
ANIMAL#	-1	0	1	2	3	4
6541	138	187	214	229	249	254
6542	146	192	215	228	237	256
6543	126	157	188	210	232	239
6544	134	168	184	200	209	221
6545	130	176	205	228	248	256
MEAN	135	176	201	219	235	245
S.D.	7.8	14.2	14.3	13.1	16.2	15.3
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

	WEEK OF STUDY			
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

	WEEK OF STUDY			
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

	WEEK OF STUDY			
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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 VI MICRO+CONTROL

	WEEK OF STUDY			
ANIMAL#	0-1	0-2	0-3	0-4
6031	47	83	107	133
6032	57	103	137	166
6033	48	73	114	150
6034	54	86	112	140
6035	52	85	117	150
MEAN	52	86	117	148
S.D.	4.2	10.7	11.4	12.2
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 I 0 mg/m3

	WEEK OF STUDY			
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

	WEEK OF STUDY			
ANIMAL#	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

	WEEK OF STUDY			
ANIMAL#	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

	WEEK OF STUDY			
ANIMAL#	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 VI MICRO+CONTROL

	WEEK OF STUDY			
ANIMAL#	0-1	0-2	0-3	0-4
6541	27	42	61	67
6542	23	36	45	64
6543	31	53	75	82
6544	16	32	41	53
6545	30	52	72	80
MEAN	25	43	59	69
S.D.	6.0	9.4	15.4	12.1
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

	WEEK OF STUDY				
ANIMAL#	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

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Genotoxicity Sub-Group

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

	WEEK OF STUDY				
ANIMAL#	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

	WEEK OF STUDY				
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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

	WEEK OF STUDY				
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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 VI MICRO+CONTROL

	WEEK OF STUDY				
ANIMAL#	0	1	2	3	4
6031	115	102	93	82	77
6032	122	111	97	86	77
6033	124	104	87	81	78
6034	111	97	82	74	70
6035	116	101	87	77	69
MEAN	118	103	89	80	74
S.D.	5.0	5.1	5.8	4.8	4.4
N	5	5	5	5	5

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Genotoxicity Sub-Group

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

Huntingdon Life Sciences 00-6127G
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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

	WEEK OF STUDY				
ANIMAL#	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

	WEEK OF STUDY				
ANIMAL#	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

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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

	WEEK OF STUDY				
ANIMAL#	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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 VI MICRO+CONTROL

	WEEK OF STUDY				
ANIMAL#	0	1	2	3	4
6541	113	101	93	85	78
6542	98	102	91	90	94
6543	108	106	95	89	81
6544	102	97	90	88	77
6545	122	105	99	SF	82
MEAN	109	102	93	88	83
S.D.	9.1	3.7	3.5	1.9	6.6
N	5	5	5	4	5

SF=Spilled Feeder

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 VI MICRO+CONTROL

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
6031	TERMINAL SACRIFICE	17-MAY-01	4	28
6032	TERMINAL SACRIFICE	17-MAY-01	4	28
6033	TERMINAL SACRIFICE	17-MAY-01	4	28
6034	TERMINAL SACRIFICE	17-MAY-01	4	28
6035	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

Huntingdon Life Sciences 00-6127G
Genotoxicity Sub-Group

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 VI MICRO+CONTROL

ANIMAL#	TYPE OF DEATH	DATE OF DEATH	WEEK OF STUDY	STUDY DAY
6541	TERMINAL SACRIFICE	17-MAY-01	4	28
6542	TERMINAL SACRIFICE	17-MAY-01	4	28
6543	TERMINAL SACRIFICE	17-MAY-01	4	28
6544	TERMINAL SACRIFICE	17-MAY-01	4	28
6545	TERMINAL SACRIFICE	17-MAY-01	4	28