

1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS*

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TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	5
MATERIALS AND METHODS	8
Test Material	8
Test Animals	8
Experimental Design	9
Vapor Generation	11
Chambers	12
Chamber Analysis	12
Observations	13
Semen Evaluation	14
Fertility in Rats	16
Male Rats	16
Female Rats	17
Fertility in Rabbits	18
Clinical Observations	19
Cytogenetics	19
Serum Hormone Determinations	20
Heritable Translocation Test	20
Gross Necropsy Examination	21
Histopathologic Examination of Tissues	23
Ultrastructural Examination of Testicular Tissues from Male Rabbits	24
Statistical Evaluation	26

TABLE OF CONTENTS (Continued)

	<u>Page</u>
RESULTS	27
SPRAGUE-DAWLEY RATS	27
Mortality, General Health and Demeanor	27
Body Weights	27
Reproductive Parameters - Male Rats	28
Reproductive Parameters - Female Rats	31
Heritable Translocation Study in Rats	33
Clinical Laboratory Findings	34
Hematology	34
Clinical Chemistry	35
Urinalysis	35
Organ Weights	35
Gross and Histopathologic Evaluation of Male and Female Rats	37
4-Week Interim Kill	37
14-Week Interim Kill	38
Animals Dying or Killed Moribund During the Recovery Period and the Terminal Kill at the End of the Recovery Period	42
NEW ZEALAND WHITE RABBITS	47
Mortality, General Health and Demeanor	47
Body Weights	47
Semen Evaluation - Male Rabbits	48
Reproductive Parameters - Male Rabbits	51
Hematology and Clinical Chemistry Determinations	53

TABLE OF CONTENTS (Continued)

	<u>Page</u>
Organ Weights	54
Gross and Histopathologic Evaluation of Male Rabbits	56
Electron Microscopic Evaluation of Testicles from Male Rabbits	60
Qualitative Evaluation	60
Quantitative Evaluation	63
DISCUSSION	65
SIGNATURE PAGE	71
QUALITY ASSURANCE STATEMENT	72
REFERENCES	73
APPENDIX	77
GENERAL TABLES	78
TEXT RAT TABLES	82a
TEXT RABBIT TABLES	183
TEXT FIGURES	236
INDIVIDUAL ANIMAL DATA TABLES	245

SUMMARY

Groups of 10 male New Zealand white rabbits, 35 male and 35 female Sprague-Dawley rats were exposed by inhalation to 0, 0.1, 1.0 or 10 ppm of 1,2-dibromo-3-chloropropane (DBCP) vapor for 6 hours/day, 5 days/week. The rabbits in the 10 ppm exposure group were exposed for 8 weeks followed by 38 weeks of recovery. All other groups were exposed for 14 weeks followed by recovery periods of up to 32 weeks. The semen of rabbits was evaluated on a weekly basis during the exposure period and at periodic intervals during the recovery period. The fertility of male rats was evaluated by mating trials with unexposed females. The exposed female rats were mated to unexposed male rats at the end of the 14-week exposure period and again during recovery and were allowed to deliver a litter. In order to assess the fertility of the exposed rabbits, each male was allowed to mate with an unexposed female during the 14th and 41st week of the study.

Five rats/sex/exposure level were killed after 4 weeks and after 14 weeks of exposure. None died spontaneously during the exposure period. During the recovery period, a few male and female rats died spontaneously or were killed moribund. However, most survived until the end of the recovery period (26 and 32 weeks for females and males, respectively). One rabbit each in the control and 1 ppm groups and three rabbits in the 10 ppm group died or were killed moribund during the exposure period.

Exposure of rabbits to 1 and 10 ppm of DBCP by inhalation produced reductions in fertility as well as decreases in sperm count, motility and viability. Rabbits had decreased sperm counts at 1 and 10 ppm between the 8th and 14th weeks of the study. All of the 10 ppm rabbits were infertile when mated during the 14th week. In rats, no effect on fertility was observed, but a dominant lethal effect was evident at 10 ppm which tended to reverse by 5 weeks after termination of exposure. The effects of DBCP on spermatogenesis were shown to be reversible in both species exposed to 1 ppm; however, at 10 ppm, recovery was not complete under the conditions of the test.

Treatment-related pathologic alterations were observed in male and female rats sacrificed immediately after exposure to 10 ppm for 14 weeks, but not in those exposed to 1.0 or 0.1 ppm. The effects in the rats exposed to 10 ppm for 14 weeks included moderate testicular atrophy (males) and focal aggregates of altered cells in the adrenal cortex (males and females). Pathologic evaluation of the rats from the recovery portion of the study showed treatment-related alterations in males and females in the 10 and 1.0 ppm exposure groups, but not in the groups exposed to 0.1 ppm. The testicular alterations that were present in the 10 ppm males after the 14-week exposure period were tending to reverse by the end of the recovery period. Lesions in the adrenal cortex of males and females from the 10 ppm exposure level were progressive. Some rats had cortical hematocyst formation, dilated cortical sinusoids, foci

of altered cortical cells and nodular hyperplastic lesions of the cortex. Also, females exposed to 1 ppm had slight adrenal cortical lesions at the end of the recovery period. In addition, increased numbers of ovarian cysts were present in females from the 10 ppm exposure level. Finally, brain effects consisting of focal or multifocal mineralized deposits were present in males and females in the 10 ppm exposure level. No treatment-related alterations were recognized in any of the rats from the 0.1 ppm recovery groups.

Rabbits exposed to 10 ppm had severe testicular alterations as early as 4 weeks into the study and these progressed to severe testicular atrophy by 8 weeks. Those exposed to 1 ppm for 14 weeks developed moderate testicular atrophy (approximately 50% reduction in size). Following the recovery period, the rabbits in both the 10 and 1 ppm groups had evidence of partial reversibility of the testicular atrophy. Electron microscopic evaluation of testicular tissue confirmed the light microscopic effects and also indicated increased numbers of abnormal sperm within the seminiferous tubules of rabbits at both the 10 and 1 ppm exposure levels. Those exposed to 0.1 ppm had an equivocal increase in abnormal sperm after the 14-week exposure period. This equivocal effect was not present after the recovery period.

In conclusion, exposure to 1 or 10 ppm of DECP for 14 weeks produced treatment-related pathologic alterations and effects on reproductive capacity in both rats and rabbits. No adverse effects were observed in either rats or rabbits exposed to 0.1 ppm following conventional

methods of evaluation. However, electron microscopy did show equivocal effects in the rabbits exposed to 0.1 ppm immediately following the 14-week exposure period, but not after the recovery period. It is significant to note that male rats and rabbits displaying moderate testicular atrophy and other DECP-induced alterations were still fertile and upon breeding with unexposed females were able to sire normal appearing pups. Based upon these results, it was concluded that the no adverse effect level of DECP was determined to be 0.1 ppm in both species except for an equivocal effect on sperm morphology in rabbits detected only by electron microscopy, which did not appear to affect fertility.

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INTRODUCTION

The compound 1,2-dibromo-3-chloropropane (DBCP) has been used as a soil fumigant and nematocide since 1955. Recent reports have associated exposure to DBCP with low sperm counts among male workers in several chemical companies (Whorton et al., 1977; Federal Register, September 9, 1977). Studies in laboratory animals indicate some potential for DBCP to adversely affect spermatogenesis. Prior to this observation in male workers, toxic effects of DBCP were reported in experimental animals by several investigators. Torkelson et al. (1961) exposed rats, guinea pigs, rabbits and monkeys for 50-66 exposures (7 hrs/day) at 10-12 ppm DBCP over 70-92 days. Histologic examination of the testes of rats exposed to DBCP revealed degenerative changes in the seminiferous tubules, an increase in the number of Sertoli cells, and a reduction in the number of sperm cells. In male rats exposed to 5 ppm DBCP (50 exposures in 70 days), focal histologic changes were noted in the epithelium of the testes.

Faydysh et al., (1970) reported necrosis in the testes of rats given 70 mg/kg/day of DBCP orally for 45 days. Administration of 5 mg/kg/day of DBCP orally to male rats for 8 months resulted in decreased sperm motility (Rakhmatullaev, 1971). Reznik and Sprinchan (1975) found marked effects on spermatogenesis in male rats and on the estrous cycle in female rats given a single oral dose of 100 mg/kg of DBCP or multiple doses of 10 mg/kg. Ruddick and Newsome (1979) administered DBCP orally at dosage levels of 12.5, 25 or 50 mg/kg/day to pregnant rats on days 6-15 of gestation. No teratogenic effects were observed; however, fetotoxic effects were apparent at maternally toxic doses of 25 and 50 mg/kg DBCP.

DBCP was found to be directly mutagenic to Salmonella typhimurium TA 1530 and Escherichia coli pol. A (Rosenkranz, 1975). Prival et al., (1977) reported DBCP to be a direct weak mutagen in Salmonella TA 1535. Blum and Ames (1977) presented data which shows that DBCP was mutagenic with metabolic activation in Salmonella typhimurium TA 100. Biles et al., (1978) reported DBCP to be a potent mutagen after metabolic activation in microbial studies using Salmonella typhimurium TA 1535. Kapp (1979) reported DBCP to be a clastogenic agent in the rat. DBCP also induced unscheduled DNA synthesis in premeiotic germ cells of male mice (Lee and Suzuki, 1979). Teramoto et al., (1980) showed that DBCP induced dominant lethal mutations in rats but did not cause dominant lethals in mice.

Two inhalation probe toxicity studies were recently conducted with DBCP and reported from this laboratory (Burek et al., 1980). In the first probe study, groups of 5 male Sprague-Dawley rats, 2 male New Zealand white rabbits, and 2 male beagle dogs were exposed to 50 ppm of DBCP for 6 hours per day, 5 days per week for 2 weeks (rats and rabbits) or for 4 weeks (dogs). Degenerative testicular changes were observed in all three species. In the second probe study, 4 male New Zealand white rabbits were exposed to 10 ppm for 2 weeks. All 4 rabbits had slight treatment-related histologic alterations in the testicles. The rabbit was considered to be the most sensitive species for the testicular alterations. Furthermore, semen samples were easily obtained and breeding studies could be conducted. Therefore, the rabbit was selected for use in the study described in this report. The rat was selected because DBCP-induced testicular effects had already been studied in earlier work (Torkelson, et al., 1961).

The purpose of the study reported herein was: 1) to assess the effects of inhaled DBCP on spermatogenesis and fertility in laboratory animals, 2) to determine the maximum level of exposure to DBCP that does not have an effect on reproduction and 3) to evaluate the reversibility of these effects.

To assess the effects of DBCP on the fertility of rats and rabbits, test animals were exposed for a period of 14 weeks (slight excess of one spermatogenic cycle) and animals were held for recovery for several weeks.

Periodic analysis of a semen sample from each rabbit was performed during the exposure and recovery periods. The male rabbits were mated to unexposed female rabbits at the termination of the exposure period and again prior to sacrifice at the end of the recovery period to determine their ability to sire normal litters. To assess fertility in male rats, animals were mated periodically to unexposed female rats both during and after the exposure period. The exposed female rats were mated with unexposed males at the end of the 14-week exposure period and again during the recovery period.

MATERIALS AND METHODS

Test Material. Production grade purity of 1,2-dibromo-3-chloropropane (Lot No. M03196) was supplied by the Dow Chemical Company, Magnolia, Arkansas. Results of gas chromatographic analysis of the test material before and after exposure are presented in Table 1.

Test Animals. Male New Zealand white rabbits (Langshaw Farms, Augusta, Michigan) and male and female Spartan Sprague-Dawley rats (Spartan Research Animals, Haslett, Michigan) were used for this study. Adults of both species were used with the male rabbits being approximately 6 months old and the male and female rats weighing 350 to 450 and 225 to 300 grams, respectively. They were housed individually in wire-bottom cages during the intervals between exposures in rooms designed to maintain a temperature of 73°F, relative humidity of 45%, and light cycle of 12 hours light and dark.

Animals were maintained in facilities fully accredited by the American Association for Accreditation of Laboratory Animal Care. They were supplied with commercial laboratory chow (Ralston Purina Company, St. Louis, Missouri) and tap water free choice during the intervals between exposures. During the exposure period, food and water were not available. During exposures, rabbits and rats were placed 2 per cage and 5-7 per cage, respectively, in wire-mesh exposure cages. During periods of breeding, rats were held 2 to 3 per cage in wire-bottom cages in rooms designed to maintain parameters similar to those listed above.

Following breeding, the bred female rats were maintained singly in plastic shoe box reproduction cages provided with nesting material (BED-O-COBS, Paxton, Indiana). During the recovery period, all animals were housed individually in wire-bottom cages.

All animals were uniquely identified by a metal ear tag (rats) or ear tattoo (rabbits). The rabbits and rats were allowed to acclimate to the laboratory for a period of at least one month prior to use. Animals were assigned randomly to cages before being placed on test by a series of random numbers which were computer-generated.

Experimental Design. The experimental design of the study is summarized in Table 2. Groups of 10 male rabbits, 35 male rats, and 35 female rats each were exposed by inhalation to 0, 0.1, 1.0 or 10 ppm of DBCP vapor. Exposures were for 6 hours/day, 5 days/week (Monday through Friday) for 14 consecutive weeks, with the exception of the 10 ppm rabbits which

were exposed for only 8 weeks due to a high incidence of mortality. The exposure length was designed to encompass the length of the spermatogenesis cycle in the rat and rabbit (Swierstra and Foote, 1965). The semen of rabbits was evaluated on a weekly basis during the 14 week exposure period and at periodic intervals during the recovery period. Semen evaluation consisted of color, volume, sperm concentration, sperm motility and viability. All male rats employed in this study were of proven fertility (able to sire at least one litter during a pre-exposure mating). The fertility of male rats during the study was evaluated by mating trials with unexposed females as indicated in Table 2. The exposed female rats were mated to unexposed male rats at the end of the 14-week exposure period and during the 33rd and 34th week of the study and were allowed a normal delivery of the litter. In order to assess the fertility of the exposed rabbits, each male was allowed to mate with an unexposed female rabbit during the 14th and 41st week of the study.

Hematology, clinical chemistry and urinalysis determinations (rats only) were performed at various intervals during the study (Table 2).

At the end of the exposure period, animals were held for various periods to determine whether any of the observed effects were reversible. The various parameters which were monitored during the post-exposure period are summarized in Table 2. During the exposure period, an interim sacrifice of 5 rats/sex/group was performed at 4 weeks; a second sacrifice was performed at the termination of the exposure period (8 weeks for the 10 ppm rabbits and 14 weeks for all other groups). The final

sacrifice took place at the termination of the recovery period and occurred after 26 weeks of recovery (40th week of the study) for the female rats, after 32 weeks of recovery (46th week of the study) for the male rats and after 32 weeks of recovery (38 weeks for the 10 ppm group) for the rabbits. In addition, all animals that were found dead or moribund were also submitted for a complete necropsy examination.

Additional details of the study design are presented in the respective section under methods.

Vapor Generation. DBCP was generated using a perforated-plate distillation column. The column was ~18" long, ~1" ID, and had fifteen plates. The column was connected to one neck of a 3-neck 500 ml flask. Liquid DBCP (~300 ml) was placed in the flask, and continuously pumped from the flask to the top of the column using a FMI (3/8") ceramic piston pump, having a pumping rate of ~3 ml/min. Teflon tubing, 1/4" OD, was dipped into the liquid DBCP in the flask and passed through a tight fitting on the inlet side of the pump. Another 1/4" Teflon tube was similarly fitted to the outlet side of the pump and was heat-sealed to a glass fitting at the top of the column which provided a tube through which liquid DBCP could drip onto the top plate of the column. This arrangement ensured that the system was airtight. Compressed air was passed through a charcoal filter, a needle valve, a rotameter, and into the third neck of the flask, exiting through a side-arm on the glass fitting at the top of the column. A measurement of DBCP concentration in the air exiting from the column showed that it was roughly

at the calculated saturation level at room temperature (0.5 mm Hg ~700 ppm). In order to achieve target concentrations for the exposures, appropriate dilutions with air were made.

Chambers. The study consisted of exposure of animals to concentrations of 0.1, 1.0 and 10 ppm of DBCP. Three Rochester-type chambers, each having a volume of 4.5 m³, and located in adjacent rooms, were employed. All chambers were operated at a main airflow rate of ~900 liters/min, equivalent to ~12 air changes/hour and a negative pressure of ~0.1" H₂O. With this system, nominal (±10%) target concentrations were reached within about 20 minutes from start-up, and target concentrations were usually easily maintained to within 5% throughout the 6 hours of exposure.

Chamber Analysis. The vapor generation methods were such that the ultimate control of the level of DBCP in each exposure was the analytical concentration of DBCP in the chamber, thereby requiring frequent analysis of chamber air, especially during daily start-up procedures. The method chosen was gas chromatography, employing two sample loops and arranging for short retention times, so that analyses could be made as frequently as once each 2 minutes or as necessary. A separate gas chromatograph was used to analyze each chamber.

The basic gas chromatography arrangement employed a Varian Model 1400 instrument, using a 6' x 1/8" stainless steel column packed with a 10% UCW-98 on 80/100 mesh Chromosorb-W. The column was operated isothermally

at 160°C, using prepurified nitrogen carrier gas at a flow rate of 50 ml/min. Under these conditions, the DBCP peak had a retention time of ~40 seconds, was sharp, and was well-resolved from background (air) signal.

For analysis at the levels of 1 ppm and 10 ppm, the sample loops had a volume of 1 ml. The detector was flame ionization, using 30 ml/min H₂, 200 ml/min air, and thermostated at 200°C. Response and signal/noise were entirely satisfactory for concentrations in the range 1-50 ppm DBCP. Sensitivity was well below 1 ppm, and repeatability was within ±2% of the measured amount. Response was linear in all ranges.

For analysis at the level of 0.1 ppm, an electron capture detector was employed, thermostated at 240°C. The sensitivity was so high that the sample loops consisted simply of "shorting" together the leads of the multiport valve used to switch sample loops. Repeatability was +15 to -3% of the measured amount. The results of the chamber air analyses are summarized in Table 3.

Observations. The body weights of all rabbits and rats were generally recorded weekly throughout the study. The animals were generally observed daily for overt signs of toxicity or changes in demeanor. Any animals which appeared moribund or died spontaneously during the course of the study were submitted for gross pathologic evaluation.

Semen Evaluation. Semen evaluation was performed on the rabbits at the intervals indicated in Table 2. Semen collections were performed prior to placing the animals in the chambers. Semen was collected in a graduated test tube from each rabbit by means of an artificial vagina. After collection, the volume of semen was obtained and its color was recorded. The semen was placed in a constant temperature bath at 37°C for 15 minutes to allow it to liquify.

The motility and ratio of live and dead sperm were determined after the semen had liquified. To assess motility, a large drop of semen diluted with warm saline was placed on a glass slide under a cover slip and examined at 400 X magnification. The first 100 sperm observed were ranked as follows: 1) progressively motile (moving from place to place), 2) non-progressively motile (twitching tails but staying in one place), and 3) non-motile (no movement). The ratio of live and dead sperm was determined by staining a drop of semen with eosin-aniline blue stain² and counting 100 sperm per specimen. Sperm counts were determined using a modification of a method using a Coulter Counter, Model ZBI described by Gordon et al., (1965 and 1967) or by using the hemocytometer method described by Miller (1955). For the Coulter Counter method a 10 µl aliquot of the semen sample was diluted with 1 ml of Isoton II (Coulter Electronics, Inc., Hialeah, Florida) in a 2 ml Autoanalyzer sample cup.

²Aniline blue, 5 g; eosin B, 0.75 g; sodium citrate, 2.9 g; water, 100 ml.

Subsequently, 250 μ l of the diluted semen was added to 24.75 ml of diluent³ in a commercial blood cell counter vial. This second dilution was mixed and allowed to stand for approximately 10 minutes. Additional dilutions were made, as necessary, to insure that the concentration of sperm in the aliquot was within the range of accuracy of the Coulter Counter.

The actual sperm count was determined using a Model ZBI Coulter Counter equipped with a Channelyzer (Coulter Electronics, Inc., Hialeah, Florida). The aperture size was 50 x 60 μ ; the counts were made with an amplification setting of 1.0 and aperture current setting of 1.0. The instrument was volumetrically calibrated with 2.9 μ and 3.4 μ diameter standard latex particles. Using these settings, the Threshold Factor was 0.74. If the sample count was too high or too low, different dilutions were made to maintain the sample count within the range of 3,000 to 7,500. The actual number of sperm per ml was calculated by taking the average of 5 sample counts, then adding the coincidence factor, subtracting the background count, and multiplying this corrected value by the dilution factor. Sperm count/ml was also evaluated by hemocytometer count. Hemocytometer counts were used when the Coulter Counter could not give an adequate reading (Counts of 3000 or less could not be obtained on the Channelizer).

³ 750 ml isoton II, 37.5 ml acetic acid, 0.15 gm saponin.

Fertility in Rats

Male Rats: Groups of 20 male rats per exposure level were mated with unexposed females of reproductive age during the following weeks of the study: 2,4,7,10,12,14,16,19,24,29 and 41 (Table 2). All of the males used for the experiment were of proven fertility (able to sire at least one litter during a pre-exposure mating). Beginning on the first day of exposure of the indicated weeks, each male was placed with two female rats for 7 days, except while they were exposed in the inhalation chambers. Twelve days after the last day of cohabitation (except week 41), the females were sacrificed by carbon dioxide anesthesia and their uterine contents were examined. The number of corpora lutea, implantation sites, and resorption sites were recorded. The male fertility index was expressed as follows:

$$\text{Male Fertility Index} = \frac{\text{Number of fertile males}}{\text{Number of males housed with females}} \times 100$$

For each litter, the following indices were calculated:

$$\begin{array}{l} \text{Pre-Implantation} \\ \text{Loss (\%)} \end{array} = \frac{(\text{Number of corpora lutea minus} \\ \text{Number of implantation sites}) \times 100}{\text{Number of corpora lutea}}$$

$$\begin{array}{l} \text{Post-Implantation} \\ \text{Loss (\%)} \end{array} = \frac{\text{Number of resorption sites} \times 100}{\text{Number of implantation sites}}$$

The mean value for each male was calculated for each of these indices.

During the breeding in the 41st week, vaginal smears were obtained from each rat until sperm and/or a vaginal plug was detected in order to determine the day of gestation. At the end of the 7 days of mating or at the time both females were found to have sperm in the vagina, males were separated from the females. Each timed pregnant rat was sacrificed on its respective day 21 of gestation. All other female rats which did not exhibit sperm or a vaginal plug were sacrificed 20 days following the first day of cohabitation. The following parameters were noted at cesarean section: number of corpora lutea, number of implantations, number of resorptions, number of live and dead pups, sex of each fetus and external examination (including palate examination) of each fetus. The objective of this breeding was to determine whether DBCP-exposed male rats were able to sire pups which were grossly normal. After evaluation of these data, all exposed male rats were sacrificed during the 46th week of the study for pathologic examination.

Female Rats: At the end of the 14 week exposure period, 20 exposed female rats per exposure level were placed in separate cages with an unexposed adult male rat for two consecutive 5-day periods, each with a different male. After the period of cohabitation the females were placed singly in delivery cages containing ground corn cob litter for nesting. The date of delivery (day zero) and the number of live and dead pups delivered were recorded. On the day after delivery (day 1), the number of live pups of each sex was recorded and the pups were examined externally for morphologic alterations and were then discarded.

A similar breeding of exposed female rats with unexposed male rats was performed again during the 33rd and 34th weeks due to poor survival of pups at the prior breeding interval. Following this breeding all exposed female rats were sacrificed during the 40th week of the study for pathologic examination.

Fertility in Rabbits. During the 14th week of the study, each male rabbit was allowed to mate with an unexposed female rabbit; the day of mating was considered to be day zero of gestation. Immediately after copulation, each doe was given an injection of 50 units of human chorionic gonadotrophin (W. A. Butler, Columbus, Ohio) in the lateral ear vein to induce ovulation. On day 28 of gestation, the females were killed with carbon dioxide. The number of corpora lutea, implantations, and resorptions were recorded. The male fertility index, the pre-implantation loss, and the post-implantation loss were calculated.

To evaluate whether the exposed male rabbits were able to sire normal pups, each exposed male rabbit was allowed to mate with two unexposed virgin female rabbits during the 41st week of the study. Immediately after copulation, each doe was given an injection of 50 units of human chorionic gonadotrophin in the lateral ear vein. On day 29 of gestation the females were sacrificed to evaluate the following parameters: number of corpora lutea, number of implantations, number of resorptions, number of live and dead pups, and external examination (including palate examination) of each pup. After evaluation of these data, exposed male rabbits were sacrificed during the 46th week of the study for pathologic examination.

Clinical Observations. Hematologic evaluations^a were performed on groups of 1 to 4 rabbits per exposure level and 5 rats/sex/exposure level during the following weeks -2 (rabbits only), -1 (rats only), 9, and 13. Prothrombin times were determined on 3 to 4 rabbits per exposure level (except the 10 ppm group) and 5 rats/sex/exposure level during the 9th (rats only) and 14th weeks of the study. Urinalyses^b were conducted on 5 rats/sex/exposure level during the 9th, 13th, and 14th (males only) weeks of the study. Clinical chemistry determinations^c of serum urea nitrogen concentration, serum alkaline phosphatase activity, serum glutamic pyruvic transaminase activity, and serum glutamic oxaloacetic transaminase activity (rabbits only) were made on 3-4 rabbits/exposure level (except the 10 ppm group) and 5 rats/sex/exposure level. The clinical chemistry determinations were performed at the time of necropsy during the 14th week of the study. The rats and rabbits were anesthetized with methoxyflurane and carbon dioxide, respectively; the trachea was clamped, and blood was obtained following decapitation.

Cytogenetics. Bone marrow preparations for cytogenetic examination were made on 5 rats/sex/level of exposure at the termination of exposure. These slides were not examined microscopically but were stored for possible future examination.

^aPCV - Microhematocrit Centrifuge, Clay-Adams Co., New York;
RBC, WBC counts, Hgb-Coulter Counter Model ZBI and Hemoglobino-
meter, Coulter Electronic, Hialeah, Florida.

^bpH, sugar, protein, ketones, bilirubin, urobilinogen and
occult blood - Multistix - Ames Company, Elkhart, Indiana.

^cBUN, AP, SGPT, SGOT - Centrifl Chem System 400, Methods File,
Union Carbide Corporation, Rye, New York.

Serum Hormone Determinations: The serum concentrations of FSH (follicle stimulating hormone) and testosterone were determined by radioimmunoassay at the Bioscience Laboratories, Van Nuys, California. FSH was monitored from 5 rats per sex at 4 and 14 weeks of the study and from 3-6 male rabbits at 14 and 46 weeks of the study. Testosterone was monitored from 5 male rats at 4 and 14 weeks and from 3-6 male rabbits at 14 and 46 weeks of the study.

Heritable Translocation Test. During the first week post-exposure, 20 male rats/group were placed in individual cages containing one unexposed female rat for a period of 7 days. Subsequently, the female was allowed to deliver her litter in a delivery cage with corn cob bedding. The following data were recorded: the date of parturition, the number of live and dead pups on the day of parturition, and the number and sex of live pups on the day after delivery (day 1). On day 14, all female pups were removed and killed. At weaning, two male pups from each litter, selected by a table of random numbers, were saved as parents for the next generation. The remainder of the litter was killed immediately.

At approximately 24 weeks of age, (42nd week of study) F₁ males were mated with unexposed, sexually mature female rats. One male from each litter was selected (by a table of random numbers) for this mating, and was placed in a cage with two females for 7 days. The females were sacrificed approximately 12 days after the last day of cohabitation, and the number of corpora lutea, implantations, and resorptions were recorded. The incidence of pregnancy, the pre-implantation loss, and the post-implantation loss were calculated. At the end of this evaluation, all F₁ males were sacrificed.

Gross Necropsy Examination. A gross necropsy examination was performed on male and female rats and male rabbits including those animals that were sacrificed during the exposure period, those that were held for the recovery portion of the study, and those that died or were killed moribund during the study. The first interim sacrifice was after 4 weeks of exposure (rats only) and the second was at the termination of the exposure period (8 weeks for the 10 ppm rabbits and 14 weeks for all other groups). The final sacrifice took place at the termination of the recovery period and occurred after 26 weeks of recovery (40th week of the study) for the female rats, after 32 weeks of recovery (46th week of the study) for the male rats and after 32 weeks of recovery (38 weeks for the 10 ppm group) for the rabbits. The rats that were submitted alive were killed by decapitation following clamping of the trachea under methoxyfluorane anesthesia, while the rabbits that were submitted alive were killed by decapitation following CO₂ anesthesia. Those animals that were submitted as part of the interim or terminal kills had been deprived of food overnight prior to necropsy.

The eyes from all animals were examined by gently pressing a glass slide against the cornea and examining the eye under bright fluorescent illumination. A complete gross pathologic examination was performed by a veterinary pathologist. Prior

to fixation of the tissues, the weights of the liver, kidneys, brain, heart, testes and epididymides were recorded from all rats at all dose levels from the 4-week, 14-week and recovery terminal kill groups and from rabbits at the 8-week, 14-week and terminal kill groups. Adrenal gland weights were also taken from rabbits at the terminal kill. In addition, the lungs and trachea from all animals were removed as a unit and expanded with phosphate-buffered 10% formalin using a syringe. Representative sections of all the major organs and tissues were collected and preserved in phosphate-buffered 10% formalin and those tissues routinely collected are listed in Table 49. Exceptions to the formalin fixation included the fixing of one ovary from each female rat and one testicle and epididymis from each male rat and rabbit in Bouin's fixative. The other testicle and epididymis and the other ovary from each rat were fixed in phosphate-buffered 10% formalin. Furthermore, the eyes from all rats and rabbits from the interim and terminal kills were fixed in Zenker's fixative while the eyes from the animals that were killed moribund or died spontaneously during the study were fixed in phosphate-buffered 10% formalin.

In addition to the tissues routinely collected for light microscopy, there were tissues collected and fixed in glutaraldehyde for possible electron microscopy. Tissue for this purpose was collected from 5 male rats per dose level at the 14-week kill. Tissue was collected in glutaraldehyde from the one rabbit in the 10 ppm group that was killed after 8 weeks of exposure and from all of the control and treated rabbits

after 14 weeks exposure (interim kill) as well as all at the terminal kill of the recovery period. These tissues were collected from the testicles for possible future electron microscopy; however, tissues from rats were not evaluated because of difficulties in handling the tissue and the fact that the rabbit was the most sensitive species for the testicular effects of DBCP. The rabbits provided better material for electron microscopic evaluation and they were, therefore, the only animals used for this portion of the study.

Serum was collected and saved from all animals that were killed as part of the interim and terminal kills. The serum was collected immediately following the decapitation procedure by exsanguinating the animals into a glass test tube.

Histopathologic Examination of Tissues. Tissues were processed using conventional methods, embedded in paraffin, sectioned (5-6 μ) and stained with hematoxylin and eosin. A complete list of the organs and tissues examined microscopically from the rats and rabbits is presented in the tables summarizing the histopathologic findings for the various time periods during the study. In general, complete sets of tissues were run on the rats and rabbits that were killed in the control and top dose groups at the end of the recovery period. From the other groups, various selected tissues were examined as deemed appropriate by the pathologist.

Ultrastructural Examination of Testicular Tissue From Male Rabbits

Testicular tissue was collected and examined ultrastructurally from most of the male rabbits on this study and summarized in Table 53. These included 3 animals from the control group which were killed after 14 weeks of exposure, 4 animals from the 0.1 ppm group which were killed after 14 weeks, 4 animals in the 1.0 group which were also killed after 14 weeks, and 1 animal from the 10 ppm group which was killed after 8 weeks of exposure. Following the exposure period, rabbits in each of the different dose groups were allowed to go on for recovery for up to 38 weeks. These included 6 control animals and 3 animals each in the 0.1 ppm, 1.0 ppm and 10 ppm groups. At the time of necropsy, the testicles were quickly removed from the animals following the decapitation procedure. They were then weighed and a slice approximately 2 mm in thickness was taken for electron microscopy. In order to increase the firmness of the tissue before cutting into 1 mm³ blocks, the slice was fixed for 1-6 hours in 2.5% phosphate-buffered glutaraldehyde fixative. The 1 mm³ blocks were washed in phosphate buffer, and post-fixed in 1% phosphatebuffered osmium tetroxide. Dehydration was accomplished through a series of ethanol washes. After immersion in propylene oxide, the blocks were infiltrated with Epon 812 and embedded in polyethylene capsules.

Testicular sections of about 1 μ in thickness were cut with a glass knife on a Sorvall MT-2B ultramicrotome, stained with toluidine blue, and examined by light microscopy. The sections were used to select the

more desirable blocks for thin sectioning. Three blocks were selected and examined per animal. Thin sections, approximately 600-700 A were cut from the 3 selected blocks per rabbit. Selected tissues were cut with a diamond knife on the Sorvall MT-2B ultramicrotome, floated on a 200-mesh grid, and stained with uranyl acetate and lead citrate. The individual grids were examined and electron photomicrographs were made using a Zeiss EM-10 electron microscope. Development of negative sheets and printing was performed within this laboratory using standard techniques for Kodak 4489 film and Kodak Kodachrome paper.

The grids were first examined by the electron microscopist in conjunction with the pathologist, and initial comments recorded on individual animal observation sheets. There were two types of parameters that were evaluated and these included a qualitative descriptive portion and an attempt to quantify the results. Mature spermatids were counted and graded as either abnormal or normal. Cap phase spermatids were also evaluated for the presence or absence of nuclear breaks in the nuclear membrane and were counted as having 0, 1, or >1 nuclear break per cell. Interstitial cells were also evaluated and graded for the number of lysosomes, and fat content on a semiquantitative basis.

Statistical Evaluation. Body weights, organ weights, clinical chemistry determinations, specific gravity of urine, hematologic parameters, numbers of corpora lutea and implantation sites and parameters concerning semen evaluations were evaluated by a one-way analysis of variance; differences between experimental means and the control were examined using Dunnett's test (Steel and Torrie, 1960). Where appropriate, a transformation of the data or a non-parametric analysis of variance by ranks was used to evaluate these parameters. For body weight and food consumption data, statistical outliers were excluded from the calculation of the group means (Grubbs, 1969). The level of significance chosen for identification of statistical outliers was $p < 0.02$. The level of reported significance for all other parameters was $p < 0.05$. The pre-implantation loss, number of resorptions, and post-implantations loss were analyzed by using the Wilcoxon test as modified by Haseman and Hoel (1974). The fertility indexes were analyzed by the Fisher's exact probability test (Siegel, 1956).

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RESULTS

SPRAGUE-DAWLEY RATS

Mortality, General Health and Demeanor. No deaths occurred during the exposure period among rats exposed to DBCP. However, several animals, both in control and treated groups, died during the late recovery phase of the study (discussed under Pathology). None of these deaths were attributed to DBCP exposure. There were no overt clinical signs of toxicity or changes in appearance of the rats of either sex during the course of the study that could be attributed to the exposure to DBCP.

Body Weights. Mean weekly body weight data for male and female rats are presented in Table 4 and 5 respectively. In both males and females, a slight decrease in the body weight was observed during the entire exposure period at the high exposure level (10 ppm). Although these values were not statistically significant compared to controls, it is considered that the decrease in body weight observed at the high level during exposure is related to DBCP. However, these rats recovered their body weight immediately after termination of DBCP exposure and remained consistently higher during the recovery period. During the second week of the study, a significant decrease in the body weight was observed among female rats exposed to 10 ppm DBCP. Also, several instances of statistically significantly increased body weights among DBCP exposed rats were observed: 0.1 ppm male

rats at weeks 5,6,41,42 and 43; 10 ppm male rats at week 41; and 0.1 ppm female rats at week 4. All of these statistically significant deviations in body weights were considered random variations and were not attributed to exposure to DBCP.

Reproductive Parameters - Male Rats. Fertility of male rats was not adversely affected by inhalation of DBCP (Table 6). Throughout the study, the percentage of males which fertilized at least 1 female was 85% or more in all groups during each mating period. Among the rats exposed to 1 ppm, the percentage of males with both females pregnant was markedly decreased during the 4th week of exposure only (Table 7). This parameter was not significantly altered during any week at 0.1 or 10 ppm DBCP groups. The fertility indices observed in treated groups were within the historical control range for this strain of rat.

The average number of corpora lutea/dam was significantly decreased during the 7th week at 10 ppm, 14th week at 0.1 and 1 ppm and 16th week at 1 and 10 ppm DBCP groups (Table 8). No other statistically significant decreases from the control values were seen in other weeks. These changes were not considered biologically meaningful because these females were not exposed to DBCP.

A statistically significant decrease in the average number of implantations/dam was observed during the 7th week at 10 ppm and during the 14th week in all treated groups (Table 9). All of these were considered random variations and were unrelated to

DBCP exposure because the total number of implantations are within the range for historical controls for Sprague-Dawley rats in this laboratory.

Marked increases in the average number of resorptions were seen consistently at 10 ppm from the 4th through the 19th weeks of the study (Table 10). This was considered a treatment-related effect. It was interesting to note that by the 24th week of the study (10 weeks following the termination of exposure) the average number of resorptions at the high dose level was comparable to the control group, suggesting a reversal of the DBCP-induced effect. At the lower concentrations, the number of resorptions was comparable to controls.

Statistically significant increases in pre-implantation loss were seen in female rats bred to male rats exposed to 10 ppm DBCP during the 7th ($P=0.051$) and 29th weeks of exposure (Table 11); however, the control values during these weeks were relatively low compared to the range of control values observed in this study. At the lower concentrations, no increase in pre-implantation loss was observed. Statistically significant decreases in pre-implantation loss were seen on a sporadic basis in the 0.1 and 1 ppm groups. All of these were considered due to the biological variations which were not related to treatment.

Post-implantation loss (the percentage of implantations resorbed) was significantly increased among the unexposed females bred by males exposed to 10 ppm of DBCP during weeks 4,7,10,12,14,16 and 19

(Table 12). In the 10 ppm DBCP groups a statistically significant increase in post-implantation loss first appeared during the 4th week of exposure and plateaued by the 7th week of exposure. Some evidence of reversibility was seen during the 19th week of the study (fifth week post-exposure); during the 24th week (tenth week post-exposure), the post-implantation loss of the 10 ppm rats was comparable to that of the control rats. Inhalation of 0.1 or 1 ppm DBCP did not significantly increase post-implantation loss. The post-implantation loss observed at the high dose level is interpreted as being mediated by DBCP exposure to male rats via the dominant lethal mechanism. The dominant lethality is a chromosomal aberration in treated male spermatozoa which results in death of the developing embryo.

In order to assess whether the DBCP exposed male rats were able to sire normal pups, each exposed male rat was bred to two unexposed female rats for 7 days during the 41st week of the study. Each timed pregnant rat was sacrificed on day 20 of gestation. The pups were observed for external malformations (including palate examination) and sexed. These data are presented in Table 13. No unique anomaly was observed among fetuses sired by the DBCP-treated males.

The above results suggest that exposures up to 10 ppm DBCP did not affect the overall fertility of male rats as tested by breeding to unexposed female rats. However, the exposure of male rats to the high dose level (10 ppm) of DBCP induced a significant increase in post-implantation loss as early as

the 4th week of exposure. This effect was evident up to 5 weeks post-exposure (19th week of study). The increase in post-implantation loss was interpreted as an indication of dominant lethality. It is significant to note that continued maintenance of these treated male rats under laboratory conditions (without subsequent DBCP exposure) resulted in reversal of the dominant lethal effect by the 24th week of the study (10th week post-exposure). The no-effect level for the dominant lethal effect was established as 1 ppm DBCP. In addition, it was established that following recovery from the dominant lethal effect the exposed male rats were able to sire pups which were normal in appearance.

Reproductive Parameters - Female Rats. Female rats exposed to DBCP for 14 weeks were bred with unexposed male rats during weeks 15 and 16 of the study. Each female was housed with two different unexposed male rats, each for a 5-day period. These bred females were allowed to deliver at term. Data from these litters are presented in Table 14. Fertility of DBCP-exposed females was not significantly different from that of the control females. The average number of live pups per litter at birth (day zero) was generally higher among the DBCP treated litters than among the control litters. A trend (not statistically significant) toward an increase in the average number of dead pups/litter was seen among the DBCP-exposed groups. On day 1, the average number of live pups/litter among the DBCP-exposed groups was not significantly different from that of the controls. However, a higher incidence of litters with 4 or less pups was noted among the 10 ppm dams.

A trend toward a decrease in the gestation survival index (the percentage of pups that were alive at birth) was noted among the litters of rats that inhaled 10 ppm of DBCP when compared to the control group; however the difference was not statistically significant. The one day survival index (percentage of pups which survived for one day) was not significantly altered by exposure to DBCP. Compared to the control group, there were proportionally more males among the offspring of rats exposed to 0.1 ppm DBCP but not among those exposed to the higher concentrations. This observation is not considered to be of toxicologic significance.

The results of the examination of the pups at one day of age revealed no abnormalities which could clearly be attributed to DBCP (Table 15). One pup with acaudia or short tail was observed in each of the experimental groups. Single incidences of hematoma (umbilical region), runts and an emaciated pup were observed in treated litters only. Such observations have been made historically in control litters at a low incidence in this laboratory. Hypothermia (as determined by touch) was observed in 5 pups at the 0.1 ppm and 3 pups at the 10 ppm DBCP level. This finding was not detected at the 1 ppm level or in the concurrent control litters. The significance of this observation is unclear at this time.

Due to a slightly higher incidence of dead pups and the exclusive occurrence of some physical findings in the

litters exposed to DBCP, it was decided to rebreed these females with untreated males. Such breeding was conducted during weeks 33 and 34 of the study and the data are presented in Table 16. It is important to note that following rebreeding of these females all the parameters evaluated were generally comparable between control and DBCP treated litters. All the pups examined on day 1 were apparently normal.

Heritable Translocation Study in Rats. The F_1 male rats, sired by DBCP exposed F_0 male rats bred with unexposed female rats during the 15th and 16th weeks of the study were maintained in the laboratory until approximately 24 weeks of age. These adult F_1 male rats were bred for 7 days with 2 unexposed female rats during the 42nd week of the study. No effect on fertility was evident as the control, 0.1, 1.0 and 10 ppm groups had a 100, 94, 100 and 90% fertility index, respectively. The bred females were sacrificed 12 days after the last day of cohabitation and the number of corpora lutea, implantations and resorptions were recorded. These data are summarized in Table 17. All of the parameters evaluated were comparable between the control and 0.1 and 10 ppm DBCP groups. In the 1 ppm group, rats exhibited a statistically significant increase in post-implantation loss accompanied with a slight but not statistically significant increase in pre-implantation loss. Because of the absence of a dose-response in the latter finding it was not considered related to DBCP exposure.

Clinical Laboratory Findings

Hematology: The results of hematologic evaluations of male and female rats are presented in Tables 18 and 19 respectively. Inhalation of DBCP had no significant effect in either sex on the following: packed cell volume, red blood cell count, hemoglobin and white blood cell differential count. Compared to the control group, white blood cell counts were significantly decreased during the 9th week of exposure in all experimental groups of males. During the 13th week, a trend toward a decrease in white blood cell count was observed in all experimental groups of males, but only the 1 ppm males exhibited a statistically significant decrease. In comparison, females exposed to 10 ppm of DBCP had a statistically significant increase in white blood cell counts during the 9th but not the 13th week of exposure. These fluctuations were considered random variations unrelated to DBCP exposure because all these values were within the historical control range.

Prothrombin time was generally comparable between all groups in males at 9 and 13 weeks and at 13 weeks in females (Table 20). However, a marked decrease in prothrombin time was observed in females at 9 weeks of exposure at the two lower exposure levels but not at the 10 ppm level. Due to the lack of a temporal or dose related effect on prothrombin time, these isolated decreases were not considered related to DBCP exposure.

Clinical Chemistry: Serum chemistry analyses at the 14th week of the study are presented in Table 21, while serum follicle stimulating hormone (FSH) and testosterone level analyses at 4 and 14 weeks of exposure are presented in Table 22. None of the parameters evaluated exhibited any changes in either sex which were considered to be compound-related.

Urinalysis: Data from urinalyses in male and female rats are presented in Tables 23 and 24 respectively. Except for urine specific gravity, all of the parameters evaluated were comparable between control and DBCP-exposed groups of both sexes. Statistically significant increases in urine specific gravity were noted in males at 9 and 14 weeks of exposure at 1 ppm and at 14 weeks only in 0.1 ppm DBCP exposed rats. Such an effect was not discernible at 10 ppm in male rats or at any level among treated females. Hence, these changes were considered unrelated to DBCP exposure.

Thus it is concluded that up to 10 ppm DBCP exposure to rats did not result in any compound-induced changes in the clinical laboratory parameters evaluated. Due to the absence of DBCP-related changes in clinical laboratory parameters during the exposure period, it was not considered necessary to evaluate them during the recovery.

Organ Weights: The mean organ weights and organ/body weight ratios determined at various times during the study for male and female rats are present in Tables 25 and 26, respectively.

At the 4-week sacrifice, the weights of the brain, heart, liver and kidneys of male rats were not significantly affected by exposure to DBCP (Table 25). The testes and epididymides of the 1 ppm rats (but not the 0.1 or 10 ppm rats) weighed statistically significantly less than those of the controls; however, when the weights of the testes and epididymides were expressed relative to body weight, no significant differences were evident. Based on the lack of a dose-response, this was not considered treatment related. At the 14-week sacrifice, both the absolute and relative weights of the testes and epididymides were significantly decreased at 10 ppm, and the relative kidney weights of the 10 ppm males were significantly greater than that of the controls. No other significant changes in organ weights were found in males exposed to DBCP. However, by 46 weeks of the study (i.e. 32 weeks after termination of exposure) all organ weights in treated animals were comparable to controls, except the relative testes weight of the 10 ppm males which was significantly decreased when compared to the controls.

In females, the only statistically significant difference in organ weights at the 4-week sacrifice was a decrease in relative liver weight at the 1 ppm group (Table 26). As in the males, a significant increase in relative kidney weight was observed at the 14-week sacrifice in the females exposed to 10 ppm of DBCP. The absolute weight of the heart of females exposed to 0.1 ppm was greater than that of the controls, but the relative weight of the heart was unaffected. All of these were considered random fluctuations unrelated to DBCP exposure.

A significant decrease in the weight of testes and epididymides was observed in rats exposed to 10 ppm DBCP for 14 weeks. However, a partial recovery in the weight of these organs was apparent when the DBCP-exposed rats were sacrificed 32 weeks after termination of exposure.

Gross and Histopathologic Evaluation of Male and Female Rats

The gross pathology observations are tabulated in Table 27 for the interim kills after 4 weeks of exposure, Table 29 for the interim kills after 14 weeks of exposure, and Tables 31 and 32 for the terminal kill at the end of the recovery period which followed the 14 weeks of exposure. In addition, the gross pathologic observation from animals that died during the recovery period are also tabulated in Tables 31 and 32.

The histopathologic observations are listed in Table 28 for the interim kill after 4 weeks of exposure, Table 30 for the interim kill after 14 weeks of exposure, and in Tables 33 and 34 for the terminal kill at the end of the recovery period which followed the 14 weeks of exposure. Histopathologic observations from rats that died during the recovery period are also summarized in Tables 33 and 34.

4-Week Interim Kill. Five male and five female rats were killed after 4 weeks of exposure to DBCP. There were no grossly observed treatment-related alterations in either the male or the female rats after 4 weeks of exposure. A few tissue alterations were observed, but these were typical of spontaneous changes commonly seen in rats of this age and strain. (Table 27).

Histopathologic evaluation of tissues was limited to the male reproductive system which included the testicles, epididymides, prostate, seminal vesicles, and coagulating glands; the female reproductive system which included the ovaries, oviducts, uterus, and cervix; the brain; and the adrenal glands. Histopathologic alterations that were considered to be treatment-related were confined to the testicles of male rats. The changes consisted of focal or multifocal atrophy of individual seminiferous tubules within the testicles. The atrophy consisted of decreased spermatogenesis and loss of spermatogenic elements in individual seminiferous tubules. A few tubules had lost most of the germinal elements and contained predominately Sertoli cells. Such changes were observed in 1 of 5, 2 of 5, 0 of 5 and 0 of 5 rats from the 10 ppm, 1 ppm, 0.1 ppm and 0 ppm groups, respectively. Although these changes were slight and were not seen in all 10 ppm or 1 ppm rats, they were consistent with induced changes. There were a few other tissue alterations observed, but these were typical of the spectrum of spontaneous lesions seen in rats of this age and strain. (Table 28).

14-Week Interim Kill. Five male and 5 female rats were killed at the termination of the 14-week exposure period. Grossly observed alterations that were considered to be treatment-related were confined to the testicles; they were bilaterally decreased in size and often had a dark or tan colored appearance in 5 of the 5 male rats from the 10 ppm group. Similar changes were not observed in any of the male rats from the 1 ppm, 0.1 ppm or control groups, although 2 controls did have testicular alterations. One control rat had one testicle that was severely decreased

in size while another control had two small testicles. The etiology of the testicular changes in the controls was undetermined and could either be congenital or acquired. In either case, the changes were different from the alterations seen in the rats from the 10 ppm DBCP groups. The changes in these control rat testicles were considered to be incidental alterations which occurred spontaneously. In addition, there were a few other observations in both male and female rats that were typical of the spectrum of spontaneous lesions seen in rats of this age and strain (Table 29).

Histopathologic evaluation of tissues was limited to the male reproductive system which included the testicles, epididymides, prostate, coagulating glands, and seminal vesicles; the female reproductive system which included the ovaries, oviducts, uterus, and cervix; the liver; the kidneys; the urinary bladder; the brain; and the adrenal glands. Histopathologic changes that appeared to be treatment-related were observed in the testicles and in the adrenal glands (Table 30).

The changes in the testicles consisted of individual seminiferous tubules with decreased spermatogenesis. Some lacked germinal cells and contained only or predominately Sertoli cells. Other tubules had some germinal cells, but they were decreased in amount. Approximately 50% or more of the tubules appeared normal with active sperm production and normal-appearing spermatogenesis. Despite the testicular alterations, there were no recognized changes in the epididymides

or the accessory male genitalia of these rats. Furthermore, similar changes were not observed in any of the rats in the 1, or 0.1, or 0 ppm groups. However, there were control rats with testicles that were severely decreased in size as noted on gross examination. One was unilateral, the other bilateral. Both of these control rats with the testicular changes also had mineral deposits in seminiferous tubules, interstitial edema, and multinucleated spermatids. Such changes are suggestive for an acquired lesion possibly due to circulatory disturbances. The alterations seen in these 2 control animals were clearly different than those seen in the testicles of the rats from the 10 ppm DBCP group. Furthermore the epididymides in these 2 rats also were decreased in size and had decreased sperm in the tubular lumina. These alterations were perhaps congenital (i.e. hypoplasia), or more likely, were acquired (i.e. atrophy). In any case, the etiology is unknown, but they were considered to be spontaneous lesions unrelated to the experimental procedure.

Alterations in the adrenal glands were observed in both male and female rats in the 10 ppm groups. The alterations were classified as foci of altered cells in the adrenal cortex. The foci consisted of collections or focal aggregates of cells that differed in tinctorial and textural appearance from the surrounding normal tissue. The foci were usually multiple, were composed of only a few cells and were present in the cortex, especially the zona fasciculata. These foci were composed of

cells that were usually larger than normal, their cytoplasm was either vacuolated, granular, or homogeneous, and the color of the cells was either pale or more eosinophilic. In any case, they were morphologically distinct from the surrounding normal cortical cells. Similar foci occur spontaneously in aging rats. They begin to be seen after 12 months of age and are very common in rats older than 18 months of age, especially in females. They increase in size, frequency and incidence with age. One control male had a small unilateral focus of altered cells. In contrast, the male and female rats from the 10 ppm groups had more of these foci and they tended to be larger and bilateral. Three of the five males and three of the five females had such foci. Normally, so few numbers would make a correlation with the treatment difficult. However, there are several factors that make a correlation possible. These factors include the low background historical incidence for animals of this age and strain, the fact that similar but larger foci as well as nodular hyperplasias, were observed in the adrenal glands of the recovery rats, and that it is very unusual to see so many foci (3 of 5 male and 3 of 5 females) in rats of this age. Therefore, these adrenal gland changes in rats from the 10 ppm groups are considered to be exposure-related alterations.

There were a few other histopathologic observations made in the male and female rats, but these were typical of spontaneous naturally-occurring changes commonly seen in rats of this age and strain and are not considered to be treatment-related.

Animals Dying or Killed Moribund During the Recovery Period and the Terminal Kill at the End of the Recovery Period. Twenty male and twenty female rats were exposed to DBCP by inhalation for 14 weeks. Following the exposure period, they were removed from the inhalation chambers and allowed to go untreated to evaluate possible reversibility of the induced tissue changes. During this recovery period, a few rats died or were killed moribund. These included two males and three females in the 10 ppm groups, one female in the 1 ppm group, one male in the 0.1 ppm group, and 3 males and 1 female in the control groups. The cause of death of these rats is summarized in Table 35. Although a few tumors were observed, all could be expected in this strain of rat, and the small numbers of animals makes any correlation with the exposure levels inconclusive.

Grossly observed alterations which appeared to be treatment-related were observed in the rats that died spontaneously or were killed moribund as well as in those that were killed at the end of the recovery period. These grossly observed alterations included changes in the adrenal glands in both males and females, and in the ovaries of females. The changes in the adrenal glands were a variation in color which lead to a mottled appearance and/or the presence of pinpoint dark foci. These changes were present in 16 of the 20 males in the 10 ppm group, 2 of the 20 males in the 1 ppm group, 0 of 20 in the males from the control and 0.1 ppm groups (Table 31), 10 of 20 females in the 10 ppm group, 4 of 20 females in the 1 ppm group, and 1 of 20 females from the control and

0.1 ppm groups (Table 32). Ovarian cysts were observed in 6 of the 20 (6 of 17 females at the terminal kill) females from the 10 ppm experimental group, and only 0 of 20, 2 of 20, and 1 of 20 in the females from the 1 ppm, 0.1 ppm, and control experimental groups, respectively.

All of the male rats exposed to 10 ppm and sacrificed after the 14 weeks of exposure had testicles that were grossly decreased in size. At the terminal sacrifice, only 2 of 20 rats from the 10 ppm group had testicles that were slightly decreased in size while 0 of 20, 1 of 20 and 0 of 20 of the rats in the 1, 0.1 and control groups had changes (Table 31). It is not possible to determine if the grossly observed testicular changes in the two male rats at the 10 ppm group are age-associated or due to DBCP treatment. In any case, 18 of 20 male rats from the 10 ppm group had grossly normal-appearing testicles suggesting a reversibility of the alterations that were seen grossly after 14 weeks of exposure.

Histopathologic evaluation of tissues was conducted on all the major organs and tissues of male and female rats that died or were killed moribund during the recovery period and on all rats from the control and 10 ppm exposure levels at the termination of the recovery period. Evaluation of tissues was limited for the rats from the 1 ppm and 0.1 ppm exposure levels. The tissues examined in these groups included the male reproduction system which included the testicles, epididymides, prostate, coagulating glands and seminal vesicles; the female reproductive system which included the ovaries, oviducts and cervix; the

liver, the kidneys, the urinary bladder, the brain, and the adrenal glands. Treatment-related changes were observed in the testicles of males, the ovaries of females, the adrenal glands of both males and females and the brains of both males and females.

Testicular changes consisted of either bilateral or unilateral atrophy (decreased spermatogenesis) of individual seminiferous tubules (Table 33). These changes were slight and were less extensive than those observed at the 14-week interim kill. Age-associated, spontaneous testicular changes begin to be seen in male rats after approximately 12 months of age. Therefore, it is not surprising to see some control and low-dose rats with testicular changes. For example, 7 of 20, 5 of 20 and 5 of 20 rats from the 0, 1 and 0.1 ppm exposure levels had unilateral or bilateral testicular alterations. Such alterations were slight and are likely age-associated. In contrast, 14 of the 20 rats from the 10 ppm group had some type of testicular alterations. Therefore, some treatment-related testicular changes were present in the rats from the 10 ppm exposure levels, but not in the 1 or 0.1 ppm exposure groups.

Female rats also had alterations in the reproductive system (Table 34). Ovarian cysts were seen in 7 (6 unilateral and 1 bilateral) of the 20 females in the 10 ppm exposure group. This is in contrast to ovarian cysts present in only 1 of 20 rats in the control, 1 of 20 rats in the 0.1 ppm, and 0 of 20 rats in the 1 ppm exposure groups. The cysts were thin-walled, appeared to be follicular in origin, and varied from 2 to 7 mm in size.

A spectrum of lesions was observed in the adrenal cortex of both male and female rats. This spectrum of changes ranged from foci of altered cortical cells, to nodular hyperplasias, to dilated or ectatic cortical sinusoids, and even hematocyst formation. The foci were similar to, but larger than those foci described in rats killed after 14 weeks of exposure. The hyperplastic nodules were much larger than the foci, often caused compression of normal-appearing cortical cells, and varied in textural and tinctorial appearance from the surrounding normal cells. The hyperplastic nodules were usually bilateral and usually multifocal. One or more hyperplastic nodules were seen in the adrenal cortex in 19 of 20 males and in 18 of 20 female rats from the 10 ppm recovery groups, in 1 of 20 males and 7 of 20 females from the 1 ppm recovery groups, but in 0 of 20 rats from each of the male and female groups from the 0.1 ppm or control recovery groups. Although similar lesions occasionally occur in aging rats of this strain, those observed in the present study were clearly more extensive than would be expected for this age, or even from older rats of this strain. Therefore, the nodular hyperplasias in the cortex of the rats from the 10 ppm and 1 ppm exposure groups (both males and females) were considered treatment-related alterations.

Ectasia (dilatation) of adrenal cortical sinusoids and cortical hematocyst formation are both age-associated, spontaneously-occurring lesions in aging rats of this strain. However, the number found in the treated groups clearly exceeded the expected incidence and severity for rats of this strain and age. In the males, 4 of 20, and in the females, 3 of 20, in the 10 ppm recovery groups had ectatic cortical sinusoids.

In contrast, similar changes were found in 0 of 60 males or 1 of 60 females from the 1, 0.1, and 0 ppm recovery groups combined. Hematocyst formation was similar to the dilated cortical sinusoids except that the hematocyst represented cystic dilatation to the extent that normal architecture was altered. Present within the cortex were large areas filled with blood and generally lined by sinusoidal lining cells. The presence of these hematocysts in the adrenal glands was even more clearly treatment-related than the focal areas of ectatic sinusoids. For example, 4 of 20 males from the 10 ppm group had hematocysts while none of the 20 rats from each of the 1, 0.1, or 0 ppm recovery groups had these changes. In females, this lesion was observed in 17 of 20 rats from the 10 ppm exposure group, and in 4 of 20 rats in the 1 ppm group. None of the 20 rats from each of the 0.1 or 0 ppm exposure groups had similar changes. Therefore, adrenal cortical alterations were considered to be treatment-related in both males and females from the 10 ppm exposure groups, in females from the 1 ppm exposure group, but not in the rats from the 0.1 ppm or control groups.

The brains in both males and females had mineralized deposits in the cerebrum occurring as unilateral or bilateral multifocal basophilic deposits. Here, again, these changes were similar to those seen in aging rats, but they occurred earlier and at a much higher incidence than would be expected in rats of this age and strain. Fifteen of 20 males and 6 of 20 females from the 10 ppm group had mineral deposits in the brain. The pathogenesis of the mineral deposits is unknown. The brains from the animals from the 4 and 14-week interim kills were re-examined for possible early alterations, but no changes were detected.

NEW ZEALAND WHITE RABBITS

Mortality, General Health and Demeanor. Three male rabbits exposed to 10 ppm of DBCP died during the 8 weeks of exposure; gross examination at necropsy did not reveal the cause of death. Pasteurella-like pneumonic changes in lungs were evident at necropsy in two rabbits. Because of the high incidence of mortality noted among the 10 ppm rabbits, exposure of that group was terminated after 8 weeks, and one of the remaining 10 ppm rabbits was sacrificed. During the 11th week of the study (3 weeks post-exposure), an additional 10 ppm rabbit died with pneumonia.

One rabbit exposed to 1 ppm DBCP died with severe rhinitis and Pasteurella-like bronchopneumonia during the 10th week of exposure. At 0.1 ppm, no deaths were observed.

One control rabbit was sacrificed during the 7th week of the study due to an inner ear infection with secondary bone and brain inflammation; otherwise, no deaths occurred among the control group.

Other surviving rabbits did not exhibit any signs of altered appearance which were considered to be compound-related.

Body Weights: The weekly body weights of male rabbits exposed to DBCP are summarized in Table 36. Average body weights of the rabbits exposed to DBCP were not significantly different from those of the control rabbits during any week of the study.

Semen Evaluation - Male Rabbits: The sperm concentration and the volume of semen per ejaculate for male rabbits exposed to DBCP by inhalation are summarized in Tables 37 and 38, respectively. The average number of sperm/ml of semen (sperm count) was slightly decreased during the first few weeks of exposure among the rabbits that inhaled 10 ppm of DBCP. Similar slight decreases in the average sperm count were seen at 0.1 and 1 ppm during the first and second weeks of exposure, respectively. These decreases may have been related to the initial stress of placement in the exposure chambers. During the 7th week of exposure, a marked decrease in sperm count was noted in rabbits exposed to 10 ppm DBCP; only one 10 ppm rabbit had a sperm count above 50 million/ml. After 7 weeks of exposure, the average sperm count of the 10 ppm rabbits was significantly less than that of the controls and remained decreased for the rest of the study including the 38 week recovery period. Evidence of slight reversal at 10 ppm was first noted during the 38th week of the study (30 weeks after the last week of exposure).

At 1 ppm, statistically significant decreases in sperm counts were seen during the 11th through 14th weeks of exposure; this effect was still evident during the 16th and 19th weeks of the study but reversal was noted by the 24th week (10 weeks post-exposure).

At 0.1 ppm, the average sperm count was statistically significantly less than that of the control rabbits during the 12th week of exposure; however, this decrease was not considered to be compound-related since sperm counts during subsequent weeks of exposure were comparable to those of the controls and were not considered toxicologically significant.

There were no consistent changes in the volume of the ejaculate among the rabbits exposed to DBCP (Table 38). Although statistically significant decreases in the volume of semen were seen occasionally among the experimental rabbits, no value fell below the range of values seen in the control group and none were considered to be toxicologically significant.

The motility data on sperm from rabbits are summarized in Tables 39-41. In evaluating motility, sperm were classified as progressively motile, non-progressively motile, or non-motile. Beginning the 8th week of the study, the semen of rabbits exposed to 10 ppm of DBCP had marked decreases in the percentage of progressively motile sperm compared to the control group (Table 39). This trend continued to persist throughout the study until termination. At the lower concentrations, no consistent statistically significant decreases in the percentage of progressively motile sperm were observed. A significant increase in the percentage of progressively motile sperm was noted during the 19th week, but this was due to an unusually low control value.

Significant decreases in the percentage of progressively motile sperm were observed sporadically at the 28th week in 0.1 ppm and 46th week in 1 ppm DBCP groups but were not considered toxicologically significant.

A significant increase in the percentage of non-progressively motile sperm was seen only in the 0.1 ppm group during the 26th week of study and in the 1.0 ppm group during the 40th week of study (Table 40). At 10 ppm, increases in the percentage of non-motile sperm (Table 41) occurred in association with the decreases in progressive motility. This trend continued through study termination. Due to low sperm counts experienced at this dose level, the group mean values were not always statistically significant. The percentage of non-motile sperm among the 1 ppm rabbits was significantly greater than the control value during the 13th week of exposure only. No significant changes in the percentage of non-motile sperm were discerned in rabbits that inhaled 0.1 ppm DBCP. It is important to note that considerable variation in motility of sperm was observed among all groups as well as in individual animals throughout the study.

The percentage of sperm which were alive (as determined by eosin-aniline blue stain) among the 10 ppm rabbits was significantly decreased compared to the control value from the 8th through the 11th weeks of the study (Table 42). During the 12th through 26th weeks of the study, sperm counts among the 10 ppm rabbits were generally too low to permit accurate quantification of the percentage of live sperm; however, most

or all of the sperm were dead in the few 10 ppm rabbits which had sufficient numbers of sperm for this determination. At 1 ppm, statistically significant decreases in the percentage of live sperm were seen during the 8th, 12th and 13th weeks of exposure but not during subsequent weeks. The percentage of live sperm among the rabbits exposed to 0.1 ppm of DBCP was not significantly different from that of the control rabbits except during the 38th week (24 weeks post-exposure) of the study. This was considered random variation and not related to DBCP exposure.

Reproductive Parameters - Male Rabbits. During the 14th week of study, each male rabbit was allowed to mate with a single unexposed female rabbit. Immediately after copulation each doe was given an injection (lateral ear vein) of 50 units of human chorionic gonadotrophin. The results of the matings are summarized in Table 43. DBCP did not appear to affect libido, as judged by the percentage of males which copulated. This is particularly significant because all five of the high dose rabbits copulated and these rabbits had a mean sperm count of 2×10^6 /ml during this week of study. None of the females which were mated with 10 ppm males were pregnant, indicating that the males were infertile six weeks after their last exposure to DBCP. The fertility of the 0.1 and 1 ppm rabbits was higher than the controls.

Exposure to 0.1 or 1 ppm DBCP had no significant effect on the average number of corpora lutea per dam or the average number of resorptions per litter. However, the mean number of implantations/litter in the 1 ppm group was significantly less than that in the control group. In addition, a trend toward an increase in pre-implantation loss was noted among the 1 ppm rabbits, but this was not statistically significant. No significant evidence of an effect on post-implantation loss was discerned at 0.1 or 1 ppm of DBCP.

To evaluate whether the exposed male rabbits were able to sire normal pups, each exposed male rabbit was again allowed to mate during the 41st week of the study with two unexposed virgin female rabbits. Immediately after copulation each doe was given an injection (lateral ear vein) of 50 units of human chorionic gonadotrophin. On day 29 of gestation, the females were sacrificed to evaluate the reproductive parameters and for external examination (including palate examination) of each pup. Results of this examination are presented in Table 44. As in the previous breeding interval, the libido, as judged by the percentage of males which copulated, continued to be comparable between the control and DBCP exposed rabbits. Fertility of 0.1 and 1 ppm DBCP exposed rabbits at this interval was 100%. It is interesting to note that two of five high dose (10 ppm) rabbits which were infertile at 14 weeks of the study had regained fertility at 41 weeks of the study (mean sperm count $27.2 \times 10^6/\text{ml}$). All other reproductive parameters evaluated were comparable between all

DBCP-exposed and control groups. It was significant to note that all pups delivered by cesarean section were apparently normal in appearance by external examination.

These data clearly suggest that DBCP at 10 ppm affects fertility, however, a prolonged recovery period resulted in an initiation of recovery in some animals. Equally significant is the fact that these recovered animals were able to produce normal appearing pups.

Hematology and Clinical Chemistry Determinations: The results of the hematologic and clinical chemistry evaluations in male rabbits are summarized in Tables 45 and 46. Hematologic evaluation during the 9th and 13th weeks of exposure did not reveal any significant changes among the rabbits inhaling 0.1 or 1 ppm of DBCP. Of the four 10 ppm rabbits originally scheduled for hematologic determinations, two died during the exposure and one was sacrificed after 8 weeks of exposure. In the latter case, hematologic values were obtained at sacrifice; these were consistent with the pre-exposure values for this animal. During the 9th and 13th weeks of the study, hematologic data from the single 10 ppm rabbit evaluated were comparable to those of the control rabbits.

The average prothrombin time in rabbits was not altered significantly by 14 weeks of exposure to 0.1 or 1 ppm of DBCP (Table 46). Analysis of serum samples from these same rabbits revealed no compound-related alterations in BUN, SGPT, AP or SGOT. Samples were not obtained from a 10 ppm rabbit at 14 weeks.

The serum levels of follicle stimulating hormone (FSH) and testosterone at 14 and 46 weeks of the study in male rabbits are presented in Table 47. A significant increase in serum FSH was observed in the 1 ppm rabbits at 14 weeks and in the 10 ppm rabbits at 46 weeks. No data were available for 10 ppm rabbits at 14 weeks of the study because of termination of DBCP exposure to this group at 8 weeks. These significant increases in serum FSH were consistent with marked decreases in sperm concentration in these rabbits. FSH levels of the 0.1 ppm rabbits were unaffected throughout the study. The 1 ppm rabbits appeared to have recovered with respect to serum FSH by the 46th week of the study. This was in agreement with the recovery of semen concentration of sperm at this exposure level. The serum concentration of testosterone was comparable between control and DBCP-exposed rabbits at both the intervals monitored.

Organ Weights: The mean organ weights and organ/body weight ratios determined during the 14th week interim sacrifice and the 46th week terminal sacrifice are presented in Table 48. At the 14-week sacrifice, the weights of the brain, heart, liver, kidney, and epididymides among the rabbits exposed to 0.1 or 1 ppm of DBCP were comparable to those of the control rabbits. Testes of the 1 ppm rabbits weighed approximately 50% of the control rabbits, both on an absolute and a relative basis, and the differences were statistically significant. At 0.1 ppm the testicular weights were comparable to those of the control rabbits. No 10 ppm rabbits were sacrificed during the 14th week of the study.

However, the weight of the testes of the 10 ppm rabbit which died during the 8th week of exposure was 1.43 gm, approximately one-fourth of that of the control rabbits during the 14th week of the study. No other organs were weighed from this rabbit. One high dose rabbit was sacrificed after 8 weeks of exposure, at which time exposure of DBCP to all high dose rabbits were terminated due to higher mortality in this group. Body and organ weights for this rabbit are presented in Table 48. Again the weight of the testes was markedly decreased. In addition, a notable increase in the weight of the liver was observed in this rabbit.

At the terminal sacrifice (46th week), the weights of the brain, heart, liver and kidney among the rabbits exposed to DBCP were comparable to those of the controls. Marked decreases in the weight of the testes were present at 1 and 10 ppm levels; however, this parameter was different from control values in rabbits exposed to 0.1 ppm of DBCP. The weight of epididymides at the 0.1 and 1 ppm levels were comparable to control, while at 10 ppm a slight decrease was apparent.

Gross and Histopathologic Evaluation of Male Rabbits

The gross pathologic observations for the rabbits are tabulated in Table 50 for the 10 rabbits at each exposure concentration. This table summarizes the findings in the rabbits that died or were killed moribund during the exposure period (one control, one in the 1 ppm group, and three from the 10 ppm group); the number killed after 8 weeks of exposure (one rabbit in the 10 ppm group); the number that died or were killed moribund during the recovery period (one in the 10 ppm group); the number killed at the 14-week interim kill (three controls and four rabbits in the 0.1 ppm and 1 ppm groups); and finally, the number terminated at the end of the recovery period (six control and 0.1 ppm rabbits and five rabbits exposed to 1 and 10 ppm of DBCP). Complete sets of tissues were evaluated from the control and 10 ppm rabbits killed at the end of the recovery period. Selected tissues were examined on the remaining animals with emphasis placed on the reproductive system to evaluate the onset, severity and reversibility of the morphological changes induced by DBCP. The actual tissues examined and their diagnoses for each of the rabbits at each dose level are given in Table 51.

Six rabbits died or were killed moribund during this study (Table 52). Five of the six had pneumonia, rhinitis, pleuritis or other lesions that were consistent with a severe bacterial infection. Although cultures were not made on these rabbits, the most likely agent was Pasteurella multocida which is a

common bacterial organism in rabbits causing a variety of disease syndromes. This agent often leads to the types of lesions that were seen in these animals. It is possible that all of the deaths associated with a bacterial infection were spontaneous in nature. However, since more animals died in the 10 ppm group, it is possible that exposure to DBCP at this concentration made the animals more susceptible to bacterial infection. Therefore, the increased deaths due to bacterial infection in the rabbits exposed to 10 ppm of DBCP may or may not be treatment-related.

Despite the early mortality due to the bacterial infections, an adequate evaluation of the testicles could be made on the animals that died or were killed moribund, as well as those from the interim and terminal kills. The testicles could be adequately evaluated from these rabbits and the onset and progression of the testicular alterations could be assessed.

Treatment-related changes were confined to the reproductive system and included atrophy of the testicles, atrophy of the epididymides, atrophy of the prostate, and atrophy of the accessory genitalia. In the 10 ppm rabbits, diffuse severe testicular atrophy was observed upon gross and histopathologic examination of these animals. Testicular alterations consisted of complete or nearly complete loss of spermatogenic elements in nearly all of the seminiferous tubules. Sertoli cells were the predominant or the only cells lining most of the tissues. In addition, the tubules that still contained some evidence of germinal cells usually

had debris present in the tubules. The fourth rabbit from the 10 ppm group was killed after 8 weeks of exposure. This represented the interim kill at the end of the exposure period for the 10 ppm rabbits. At this time the atrophy was virtually complete and bilateral with no germinal cells identified in the seminiferous tubules of either testicle. The seminiferous tubules appeared to be lined only by Sertoli cells. Furthermore, there appeared to be a relative increase in the number of interstitial cells present within these testicles. This change was interpreted as a relative increase in interstitial cells due to the fact that the testicle, which once occupied a larger area, was now much smaller and the same number of cells which were present in the larger area were now confined to a smaller area due to the atrophy of the seminiferous tubules. In summary, the major changes occurred within the germinal cells of the individual seminiferous tubules, were diffuse and were nearly complete with no effects visible in Sertoli or interstitial cells.

The epididymides were also atrophic with decreased sperm in the tubular lumina. In addition, the prostate and accessory genitalia showed some decrease in size.

Following the recovery period, there were clear signs of tubular regeneration in the testicles from the rabbits that had been exposed to 10 ppm of DBCP. Some tubules appeared normal, while other tubules appeared to lack any evidence of spermatogenesis. Of the five rabbits in the 10 ppm group, three had regeneration to

the extent that approximately 25% of the tubules appeared normal. Two of the five animals had between 25-50% of the tubules with normal-appearing spermatogenesis. Therefore, even though atrophy was still present, all rabbits in the 10 ppm group showed definite signs of partial recovery or reversibility of the severe atrophy that was present after 8 weeks of exposure.

At the 14-week interim kill, rabbits exposed to 1 ppm of DBCP had moderate testicular atrophy (approximately 50% reduction in size and weight). After the recovery period, the testicles of two of the five rabbits at the terminal kill, which followed the 32-week recovery period, were grossly and histologically normal. Three of the rabbits did have gross and/or histologic alterations in the testicles, but the alterations were much less severe in degree than that seen after the 14-week exposure period. Thus, at 1 ppm, recovery was nearly complete, and would very likely have been completely reversible had the animals been allowed to live longer.

There were other gross and histopathologic alterations seen in the control and 10 ppm rabbits as well as in the tissues examined from the 0.1 and 1 ppm rabbits. These changes were not considered to be treatment-related, but rather spontaneous in nature.

Electron Microscopic Evaluation of Testicles From Male Rabbits

An electron microscopic (ultrastructural) evaluation conducted on the testicles from the rabbits killed after the 8th, and 14th week of exposure are summarized in Table 54. Those rabbits killed after the recovery period are presented in Table 55. There was considerable variability in the ultrastructural features of seminiferous tubules from individual rabbits and within different tubules of the same rabbit. This variation was true for both the exposed and control rabbits. Such variability was expected because individual tubules normally are in different stages of spermatogenesis at any given time. Some tubules were active while others were inactive and, therefore, some variability in the appearance of seminiferous tubules was expected. This variability did, however, make it difficult to quantify and interpret subtle or slight ultrastructural changes.

Qualitative Evaluation

The normal rabbit testicle contains many seminiferous tubules. The relationship of the different cells within individual tubules is illustrated in Figure 1. This can be compared to Figures 2 and 3 which are electron micrographs from a control rabbit. Note the presence and relationship of the spermatogonia, primary spermatocytes, secondary spermatocytes, cap-phase spermatocytes and spermatozoa.

The rabbit exposed to 10 ppm of DBCP for 8 weeks and sacrificed at the interim kill had nearly complete testicular atrophy. The individual tubules had small lumina, lacked spermatogonia or spermatocytes, were lined by Sertoli cells and were surrounded by a thickened and convoluted basement lamella (Figure 4). The Sertoli cells were normal except for an apparent increase in the number of lysosomes present in the cytoplasm. The interstitial cells between the seminiferous tubules appeared normal but some did have an increased number of lysosomes in the cytoplasm (Figure 5). Following the 38-week recovery period, the rabbits that had been exposed to 10 ppm for 8 weeks showed incomplete recovery. Some tubules were normal (Figure 6), others were still severely atrophic (Figure 7) and others had stages in between. The normal-appearing tubules had all stages of spermatogenesis including spermatogonia, primary, secondary and cap-phase spermatocytes, and spermatozoa. In the tubules with active spermatogenesis, there was an apparent increase in the number of abnormal spermatozoa present compared to the controls. When the abnormal spermatozoa were formed is unknown because the rate of movement of abnormal spermatozoa into the epididymides may be different than that for normal spermatozoa.

The rabbits exposed to 1 ppm of DBCP for 14 weeks had less severe testicular alterations. Approximately 50% of the tubules appeared normal. The remaining tubules were atrophic and varied from severe (complete or nearly complete) to slight atrophy. The types of changes present consisted of loss of spermatogonia, spermatocytes and spermatozoa with normal-appearing Sertoli cells. There were abnormal spermatozoa present in the tubules of control and treated rabbits and they had

many forms as illustrated in Figure 8. Some were multinucleated, others had multiple tails, others had abnormal head and acrosomal shapes and still others appeared degenerative or necrotic. Abnormal sperm were found in the controls of this study, but the relative numbers appeared to be increased in the rabbits exposed to 1 ppm of DBCP for 14 weeks. As a result, they were considered-treatment related. After 32 weeks of recovery, the rabbits that had been exposed to 1 ppm of DBCP for 14 weeks now appeared to have undergone nearly complete recovery. The tubules were similar to those in the controls and had normal-appearing active spermatogenesis. However, some tubules still had an apparent increase in the number of abnormal spermatozoa. Again, the alterations were also seen in controls, but the relative number appeared greater in the 1 ppm recovery group. Some tubules also had debris from spermatozoa within Sertoli cells (Figure 9).

Rabbits exposed to 0.1 ppm of DBCP for 14 weeks and submitted to an interim sacrifice had normal-appearing testicles. Their seminiferous tubules were similar to those seen in the controls with normal-appearing active spermatogenesis. A few abnormal spermatozoa were observed in the tubules, but the relative number was similar to the control animals. After the 32-week recovery period, there were no treatment-related alterations observed in the rabbits that had been exposed to 0.1 ppm of DBCP for 14 weeks.

Quantitative Evaluation

In order to quantify the ultrastructural finding of an apparently increased number of abnormal spermatozoa in certain exposure groups, spermatozoa within the seminiferous tubules were counted and the number (percentage) of abnormal spermatozoa were evaluated. The results are summarized in Table 54 for the rabbits examined at the end of the exposure periods (interim kills) and Table 55 for those evaluated at the end of the recovery period. The tables summarize the total number of spermatozoa counted from each rabbit and the number that appeared normal versus those which appeared abnormal (see Figure 8). One control rabbit (78-792) had one testicle that was severely decreased in size. Tissue for electron microscopy was taken from the normal-appearing testicle, but 51% of the spermatozoa were morphologically abnormal. This was in contrast to an average of 5% (range of 0 to 10%) in the other 8 control rabbits in this study. Therefore, the data from this rabbit were shown in Table 54, but were not used to determine the average percentage of abnormal spermatozoa for the control rabbits.

The 10 ppm rabbit that was examined at the interim kill after the 8-week exposure period did not have spermatozoa or evidence of active spermatogenesis in the seminiferous tubules that were examined. Therefore, no counts were obtained. However, following the 38-week recovery period, 20% of the spermatozoa were morphologically abnormal, indicating increased abnormal spermatozoa compared to the controls (Table 55). Similarly, the rabbits exposed to 1 ppm of DBCP for 14 weeks and those exposed to 1 ppm of DBCP for 14 weeks followed by 32 weeks of recovery had average values of 18% and 24%, respectively.

Therefore, rabbits exposed to either 10 ppm or 1 ppm of DBCP had increased numbers of abnormal spermatozoa within the seminiferous tubules and this increase appeared to be related to exposure to the test material.

The 0.1 ppm group was more difficult to evaluate because the 4 rabbits examined after 14 weeks of exposure had 10% (range of 7-14%) abnormal spermatozoa. Since the average percentage of abnormal sperm in the controls was 5% (range from 0 to 10%, excluding animal 78-792, which had 51%), there was an apparent increase in the 0.1 ppm group after 14 weeks. Because the variability of such counts was so great, the 10% figure may represent normal biological variation and be unrelated to the exposure to DBCP. On the other hand, it could represent a slight effect at the 0.1 ppm exposure level and also with a dose response compared to the 18% seen in the 1 ppm exposed rabbits. This can not be resolved with the data obtained from this study. In any case, if an effect was present after 14 weeks, it was not present after the 32-week recovery period (average was 6% with a range of 5-8%).

Attempts were made to quantify the breaks in the nuclear membranes of cap-phase spermatids as well as the number of lysosomes and the amount of fat in the interstitial cells. However, there was extensive variability in these parameters in both the control and exposed tissues. This variability was due to the inherent nature of the counting techniques, the artifacts and variability induced by fixation, and the variability inherent in the small sample size. Due to such factors, quantification of these parameters was not considered valid and therefore their evaluation was confined to a qualitative examination.

DISCUSSION

Results of the present study clearly indicate a potential for inhaled DBCP to interfere with spermatogenesis in rats and rabbits. Many of the effects observed were shown to be reversible, partially or completely, in both species.

Exposure of male rats to DBCP had no effect on fertility. However, a significant dominant lethal effect was seen at 10 ppm, as evidenced by an increased incidence of resorptions among unexposed females mated with exposed males. This effect was evident within 4 weeks after the first exposure, indicating involvement of spermatids. After exposure, the time course for reversal of the dominant lethal effect was approximately the same as that required for this onset. In comparison, a dominant lethal effect was not clearly discerned in rabbits exposed to DBCP, although there was a trend toward an increase in pre-implantation loss among unexposed does mated with bucks exposed to 1 ppm of DBCP.

Teramoto et al., (1980) observed a dominant lethal effect in rats given oral doses of 10 or 50 mg/kg of DBCP for 5 days as evidenced by increased incidences of resorption sites and corresponding decreases in numbers of live embryos. When mice were tested in a similar manner at doses of 50 or 150 mg/kg, no dominant lethal effect was present. Thus there appears to be quite a range of species variation in rats, rabbits and mice with regard to the dominant lethal effect.

Exposure of female rats to DBCP had no significant effect on their ability to become pregnant. However, among the females exposed to DBCP for 14 weeks before breeding, there was an unusually high incidence of litters with 4 or fewer pups at 10 ppm. Each of the experimental groups had one pup with acaudia or short tail, whereas none were seen in the control group. This malformation is not uncommon among the offspring of Spartan substrain Sprague-Dawley rats; the incidence of this defect in control groups from teratology studies conducted in this laboratory is 0.2% (13/6192) among fetuses and 2% (11/538) among litters.

Treatment-related pathologic alterations were observed in male and female rats exposed to 10 ppm of DBCP for 14 weeks, but not in those exposed to 1.0 or 0.1 ppm. The effects in the rats exposed to 10 ppm for 14 weeks included moderate testicular atrophy (males) and focal aggregates of altered cells in the adrenal cortex (males and females). Pathologic evaluation of the rats from the recovery portion of the study showed treatment-related alterations in males and females in the 10 and 1.0 ppm exposure groups, but not in the groups exposed to 0.1 ppm. The testicular alterations that were present in the 10 ppm males immediately after the 14-week exposure period were almost completely reversed by the end of the recovery period. On the other hand, the changes in the adrenal cortex of males and females from the 10 ppm exposure level progressed to the formation of cortical hematocysts, dilated cortical sinusoids, foci of altered cortical cells and nodular hyperplastic lesions of the cortex in some rats. In addition, increased numbers of

female rats with an ovarian cyst were present at the 10 ppm exposure level. Finally, brain effects consisting of focal or multifocal mineralized deposits were present in males and females in the 10 ppm exposure level. No treatment-related alterations were recognized in any of the rats from the 0.1 ppm recovery groups.

Our results are in agreement with Hasegawa, et al. (1979) who showed marked weight reduction of the epididymides and testes in rats exposed to 0.3-10 ppm DBCP. These authors also demonstrated recovery of testes weight within 1-2 months after exposure to 0.3-3 ppm DBCP. However, after DBCP exposure of 8-10 ppm, recovery of testes weight and the number of spermatozoa were not observed after 4 months.

In rabbits, decreases in sperm counts were seen at 1 and 10 ppm. The length of the spermatogenesis cycle in the rabbit is approximately 10 weeks. Thus, the sharp decline in sperm counts seen in the 10 ppm rabbits between the 8th through 10th weeks of the study indicated that DBCP affected primarily spermatogonia. This was confirmed histologically. Sperm counts were decreased to a lesser extent among the 1 ppm rabbits, and a longer period of exposure was required before an effect was observed. Histologically, the testes of the 1 ppm rabbits were less severely affected than the 10 ppm rabbits and a longer period of exposure was required before an effect was observed. All of the 10 ppm rabbits appeared to be infertile when mated during the 14th week of the study (six weeks post-exposure). However, the fertility of the rabbits

exposed to 1 ppm for 14 weeks was unaffected, in spite of the fact that their average sperm count was less than half that of the control rabbits. Two of the 5 high dose male rabbits regained their fertility when evaluated at 41 weeks of the study.

Four of ten rabbits exposed to 10 ppm of DBCP died during or shortly after the period of exposure. In at least two cases, the cause of death was due to lung changes typical of Pasteurella infection. It is possible that exposure to DBCP reduced the rabbits resistance to bacterial infection. A predisposition toward secondary infection was reported by Torkelson et al. (1961) in other species exposed to DBCP. Rakhmatullaev (1971) found changes in the microbial digesting function of the rats given 0.05 mg/kg/day of DBCP orally for eight months.

Increased FSH levels were noted in rabbits exposed to DBCP. These increases are believed to reflect a stimulated bio-feed-back mechanism which resulted from DBCP induced testicular damage. It is not likely that the testicular degeneration seen in this study was directly caused by changes in hormone levels. In this regard, Torkelson et al., (1961) showed that administration of testosterone, cortisone, or ACTH in combination with exposure to DBCP did not protect against the effects of DBCP on the testes.

Rabbits exposed to 10 ppm had testicular alterations as early as 4 weeks into the study and had nearly complete testicular atrophy by 8 weeks. Those exposed to 1 ppm for 14 weeks developed moderate testicular atrophy

(approximately 50% reduction in size). Following the recovery period, the rabbits in both the 10 and 1 ppm groups had evidence of partial reversibility of the testicular atrophy. Electron microscopic evaluation of testicular tissue confirmed the light microscopic effects and also indicated increased numbers of abnormal sperm after the 14-week exposure period which may or may not have been treatment-related. This equivocal effect was not present after the recovery period.

In the present study, the rabbit was considerably more sensitive than was the rat to the degenerative effects of inhaled DBCP on the testes. Torkelson et al., (1961) reported a similar species difference between rabbits and rats with regards to testicular weight. On the basis of the first probe study with DBCP (Burek et al., 1980), the dog appeared to be less susceptible than the rabbit but more susceptible than the rat. The reason for these species differences is not known. It is not known whether the differences in the metabolism and disposition of DBCP account for this species variation rather than differences in the intrinsic sensitivity of the germ cell.

From this study it is clear that inhaled DBCP has considerable potential to adversely affect spermatogenesis and to reduce fertility at low concentrations. However, animal data regarding the reversibility of DBCP-impaired spermatogenesis is quite favorable. In rabbits, severe testicular damage was produced which resulted essentially in aspermia and nearly complete absence of spermatogonia; yet, partial reversibility occurred

within 8-9 months of this severe insult. The dominant lethal effect observed in rats at 10 ppm was not present in male rats exposed to 1 ppm DBCP and was found to be reversible when the male rats were mated 5 weeks after cessation of exposure.

In conclusion, exposure of rabbits to 1 and 10 ppm of DBCP by inhalation produced reduction in fertility as well as decreases in sperm count, motility and viability. In rats, no effect on fertility was observed, but a dominant lethal effect was evident at 10 ppm which tended to reverse by 5 weeks after termination of exposure. Testicular degeneration and atrophy were observed in both species. The adverse effects of DBCP on spermatogenesis were shown to be completely reversible in both species at 1 ppm, however, at 10 ppm recovery was not complete under the conditions of the test. It is significant to note that male rats and rabbits displaying moderate testicular atrophy and other DBCP-induced alterations were still fertile and upon breeding with unexposed females were able to sire normal appearing pups. Electron microscopy showed equivocal effects in the rabbits exposed to 0.1 ppm immediately following the 14-week exposure period, but not after the recovery period. Based upon these results, it was concluded that the no effect level of DBCP is approximately 0.1 ppm in both species.

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1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

QUALITY ASSURANCE STATEMENT

This report represents data generated prior to the enactment of the FDA Good Laboratory Practice Regulations. The study was conducted according to standards used in this laboratory at that time. The report accurately reflects all of the data generated. All data and reports are located at the submitting laboratory.

Study Started: 28 Nov 77

Report Issued: 19 Dec 80

Protocol Audited: Nov 77

Reported: Nov 77

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1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

APPENDIX

1)	GENERAL TABLES	1 to 3
2)	TEXT RAT TABLES	4 to 35
3)	TEXT RABBIT TABLES	36 to 55
4)	TEXT FIGURES	1 to 8
5)	INDIVIDUAL ANIMAL DATA TABLES	A-1 to A-44

1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

GENERAL TABLES - 1 TO 3

Table 1

DBCP: INHALATION FERTILITY STUDY IN THE RAT AND RABBIT

Chemical Analysis of DBCP

	<u>Pre-exposure^a</u>	<u>Post-exposure^a</u>
	% by weight	
DBCP	97.3	96.6±0.4
Allyl chloride	0.5	0.59±0.06
1,2,5,6-Tetrabromohexane	0.92	1.20±0.1
2-Chloropropane	0.35	0.38±0.04
1-Chloropropane	0.03	0.04±0.004
Epichlorohydrin	0.81	1.00±0.1
1-bromo-3-chloropropane	0.11	0.10±0.01

^aThe test material was analyzed for impurities by gas-liquid chromatography 12 days prior to the first day of exposure and 40 days after the last day of exposure. Analysis was performed by the Analytical Laboratories, Dow Chemical Company, Midland, MI.

Table 2

DBCP: INHALATION FERTILITY STUDY IN THE RAT AND RABBIT

Experimental Design

Compound: 1,2 Dibromo-3-chloropropane

Species: New Zealand white rabbits (males) and
Sprague Dawley rats (males and females)

Exposure: Inhalation, 6 hr/day, 5 days/week

Level: 0, 0.1, 1.0, 10.0 ppm

Group Sizes: 10 male rabbits, 35 male and 35 female rats per level of exposure

	Pre-Exposure				Exposure (weeks)													
	(-2)	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
<u>RABBITS</u>																		
Body Weights	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Semen Evaluation	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Fertility																33		
Hematology	16 ^a										1	12			12			
Clinical Chemistry																11		
Histology																11		
FSH and Testosterone																11		
<u>RATS</u>																		
Body Weights																		
Males		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Females		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
Fertility																		
Males					77		80			80			80		80	80		
Females																		
Hematology (males and females)			40									40			40			
Clinical Chemistry (males and females)												39			39	40		
Urinalysis																		
Males												14			12	19		
Females												20			20			
Histology																		
Males							20									20		
Females							20									20		
FSH and Testosterone (males and females)								40								40		
Bone Marrow (males and females) (Slide Preparation)																10		

X = Indicates that this parameter was monitored.

^a = Indicate the number of animals evaluated.

DBCP: INHALATION FERTILITY STUDY IN THE RAT AND RABBIT

RABBITS

[illegible]

Body Weights

Study Design	Study	Year	Country	Sex	Age	Sample Size	Study Design	Study	Year	Country	Sex	Age	Sample Size
Fertility	Males	1980	USA	M	20-30	100	Fertility	Males	1980	USA	M	20-30	100
	Females	1980	USA	F	20-30	100		Females	1980	USA	F	20-30	100
Hematology (males and females)	Males	1980	USA	M	20-30	100	Hematology (males and females)	Males	1980	USA	M	20-30	100
	Females	1980	USA	F	20-30	100		Females	1980	USA	F	20-30	100
Clinical Chemistry (males and females)	Males	1980	USA	M	20-30	100	Clinical Chemistry (males and females)	Males	1980	USA	M	20-30	100
	Females	1980	USA	F	20-30	100		Females	1980	USA	F	20-30	100
Urinalysis	Males	1980	USA	M	20-30	100	Urinalysis	Males	1980	USA	M	20-30	100
	Females	1980	USA	F	20-30	100		Females	1980	USA	F	20-30	100
Histology	Males	1980	USA	M	20-30	100	Histology	Males	1980	USA	M	20-30	100
	Females	1980	USA	F	20-30	100		Females	1980	USA	F	20-30	100
FSH and Testosterone (males and females)	Males	1980	USA	M	20-30	100	FSH and Testosterone (males and females)	Males	1980	USA	M	20-30	100
	Females	1980	USA	F	20-30	100		Females	1980	USA	F	20-30	100

^a = Indicates the number of animals evaluated.

Table 3

DBCP: INHALATION FERTILITY STUDY IN THE RAT AND RABBIT

Inhalation Chamber Air Analysis for DBCP

<u>Target Concentration, ppm</u>	<u>0</u>	<u>0.1</u>	<u>1.0</u>	<u>10.0</u>
Nominal Concentration, ppm	--	ND ^a	ND ^a	ND ^a
Analytical Concentration, ppm ^b	--	0.101±.003	1.00±0.02	10.1±.2
Total Exposure Days	70	70	70	70
Exposure Days within ±10% of Mean Analytical Concentration	70	70	70	70
Average Daily Temperature ^b	ND	78±2°F	76±2°F	73±4°F
Average Daily Relative Humidity ^b	ND	52±7%	57±6%	46±6%

^aNominal concentrations could not be determined because of the nature of the vapor generation method (see text).

^bMean±Standard Deviation

1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

TEXT RAT TABLES - 4 TO 35

TABLE 4
DBCP: INHALATION FERTILITY STUDY IN THE RAT†
RAT: Male Body Weights

Week Of Study	ppm-DBCP			
	0	0.1	1.0	10
(g, mean ± S.D.) ^a				
Pre-Exposure				
- 1	511±30	522±36	514±36	526±32
Exposure				
1	518±33	519±34	514±37	514±35
2	519±35	524±43	519±39	506±34
3	528±36	537±37	517±38	509±32
4	526±41	542±36	522±38	509±31
5	530±38	554±34*	534±40	522±32
6	537±38	561±37*	544±42	529±34
7	539±36	559±43	539±44	531±31
8	544±35	563±38	551±46	537±34
9	543±28	558±38	552±46	539±35
10	544±36	561±38	545±48	523±42
11	557±36	569±39	556±48	548±34
12	561±37	574±40	560±49	550±36
13	564±36	578±41	563±47	553±37
14	561±37	571±42	551±48	546±37
Post-Exposure				
15	572±35	584±35	568±46	572±39
16	585±37	595±37	580±48	580±40
17	586±38	601±35	581±47	589±42
18	594±40	608±38	589±49	596±39
19	594±40	606±37	585±48	591±38
20	599±40	616±37	593±50	599±40
21	611±42	632±37	604±52	610±40
22	624±53	636±40	608±56	619±41
23	635±55	645±38	619±59	631±40
24	609±42	629±36	592±59	608±40
25	634±59	636±39	612±55	622±42

TABLE 4 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

RAT: Male Body Weights

Week Of Study	ppm-DBCP			
	0	0.1 (g, mean ± S.D.)	1.0	10
26	624±41	651±41	627±57	637±43
27	636±56	652±41	631±59	645±41
28	650±57	666±42	641±62	652±44
29	634±55	652±39	622±54	637±42
30	643±57	660±38	627±58	647±42
31	645±57	660±38	633±60	650±45
32	653±59	669±40	647±63	661±46
33	656±60	669±42	650±66	666±48
34	650±61	668±40	650±67	665±48
35	642±62	666±37	646±67	665±47
36	644±69	670±38	650±68	669±48
37	661±53	682±37	660±71	678±50
38	660±54	681±39	654±70	676±49
39	662±53	685±38	658±73	682±49
40	659±55	686±40	652±71	676±49
41	626±39	670±38*	645±51	661±48*
42	631±40	676±39*	650±51	662±53
43	630±41	677±41*	653±50	663±67
46 ^b	607±44	646±36	618±73	637±77

†Male rats were exposed to 0, 0.1, 1.0 or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aStatistical outliers are excluded from calculation of the mean, Grubbs test, $p < 0.02$.

^bValues for the 46th week represent fasted body weights taken prior to necropsy.

*Significantly different from the control value by Dunnett's test, $p < 0.05$.

See Table A-1 for individual animal data.

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TABLE 5
DBCP: INHALATION FERTILITY STUDY IN THE RAT†
RAT: Female Body Weights

Week Of Study	ppm-DBCP			
	0	0.1	1.0	10
(g, mean $\pm$ S.D.) ^a				
Pre-Exposure				
- 1	293 $\pm$ 19	303 $\pm$ 19	288 $\pm$ 22	294 $\pm$ 21
Exposure				
1	294 $\pm$ 17	298 $\pm$ 19	291 $\pm$ 16	289 $\pm$ 20
2	297 $\pm$ 18	302 $\pm$ 20	298 $\pm$ 19	285 $\pm$ 18*
3	298 $\pm$ 19	306 $\pm$ 19	299 $\pm$ 19	292 $\pm$ 20
4	300 $\pm$ 19	312 $\pm$ 19*	302 $\pm$ 18	295 $\pm$ 20
5	307 $\pm$ 19	315 $\pm$ 20	309 $\pm$ 18	301 $\pm$ 18
6	310 $\pm$ 20	318 $\pm$ 20	311 $\pm$ 19	300 $\pm$ 18
7	311 $\pm$ 19	318 $\pm$ 22	314 $\pm$ 19	303 $\pm$ 17
8	312 $\pm$ 18	320 $\pm$ 21	315 $\pm$ 18	304 $\pm$ 18
9	315 $\pm$ 20	322 $\pm$ 20	318 $\pm$ 18	309 $\pm$ 17
10	316 $\pm$ 20	324 $\pm$ 20	321 $\pm$ 21	308 $\pm$ 18
11	324 $\pm$ 19	330 $\pm$ 22	327 $\pm$ 20	315 $\pm$ 19
12	323 $\pm$ 19	333 $\pm$ 24	328 $\pm$ 21	317 $\pm$ 17
13	322 $\pm$ 19	333 $\pm$ 23	327 $\pm$ 22	319 $\pm$ 19
14	328 $\pm$ 20	335 $\pm$ 21	330 $\pm$ 22	322 $\pm$ 20
Post-Exposure				
15-18 ^b				
19	348 $\pm$ 31	361 $\pm$ 25	366 $\pm$ 25	348 $\pm$ 24
20	346 $\pm$ 28	352 $\pm$ 23	361 $\pm$ 22	344 $\pm$ 24
21	348 $\pm$ 23	354 $\pm$ 24	361 $\pm$ 22	340 $\pm$ 33
22	349 $\pm$ 21	348 $\pm$ 22	359 $\pm$ 19	341 $\pm$ 27
23	347 $\pm$ 22	354 $\pm$ 20	356 $\pm$ 19	345 $\pm$ 23
24	346 $\pm$ 21	349 $\pm$ 23	358 $\pm$ 22	343 $\pm$ 23
25	348 $\pm$ 20	351 $\pm$ 22	354 $\pm$ 23	346 $\pm$ 25
26	354 $\pm$ 22	359 $\pm$ 23	363 $\pm$ 26	354 $\pm$ 30

TABLE 5 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

RAT: Female Body Weights

<u>Week Of Study</u>	<u>ppm-DBCP</u>			
	<u>0</u>	<u>0.1</u>	<u>1.0</u>	<u>10</u>
	(g, mean ± S.D.) ^a			
27	352±23	358±26	365±27	352±30
28	356±22	362±23	364±28	357±30
29	354±24	360±27	362±30	359±31
30	355±26	364±30	364±26	365±35
31	353±24	356±29	369±26	365±39
32	358±25	369±30	364±29	362±31
33-35 ^b				
40 ^c	313±23	324±35	295±61	321±36

†Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aStatistical outliers are excluded from calculation of the mean, Grubbs test, $p < 0.02$.

^bFemales were bred to unexposed male rats during weeks 15, 16 and 32, 33 of the post-exposure period. During weeks 16, 17, 18 and 33, 34, 35 females were pregnant and due to deliver their young. Body weights taken during these weeks are therefore not reported.

^cValues for the 40th week represent fasted body weights taken prior to necropsy.

*Significantly different from the control value by Dunnett's test, $p < 0.05$.

See Table A-2 for individual animal data.

TABLE 6

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Fertility Index for DBCP Exposed Male Rats

Week of Study	ppm DBCP			
	0	0.1	1.0	10
2	100(20/20) ^a	100(18/18)	95(18/19)	95(19/20)
4	100(20/20)	95(19/20)	95(19/20)	95(19/20)
7	100(20/20)	95(19/20)	95(19/20)	90(18/20)
10	95(19/20)	95(19/20)	90(18/20)	100(20/20)
12	100(20/20)	95(19/20)	100(20/20)	95(19/20)
14	100(20/20)	100(20/20)	95(19/20)	100(20/20)
16	100(20/20)	100(20/20)	100(20/20)	100(20/20)
19	100(20/20)	95(19/20)	100(20/20)	95(19/20)
24	100(20/20)	95(19/20)	90(18/20)	100(20/20)
29	100(20/20)	100(20/20)	85(17/20)	100(20/20)
41	100(18/18)	95(19/20)	85(17/20)	89(17/19)

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

^aFertility Index (%) = $\frac{\# \text{ fertile males}}{\# \text{ males housed with females}} \times 100$

No value differed significantly from the control value by Fishers exact probability test, p < 0.05.

See Table A-3 through A-13 for individual animal data.

TABLE 7

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Percentage of DBCP Exposed Males with
Two Pregnancies Among Two Females

Week of Study	ppm DBCP			
	0	0.1	1.0	10
2	65(13/20) ^a	44(8/18)	53(10/19)	60(12/20)
4	75(15/20)	70(14/20)	45(9/20)	55(11/20)
7	65(13/20)	60(12/20)	60(12/20)	70(14/20)
10	65(13/20)	85(17/20)	70(14/20)	65(13/20)
12	75(15/20)	65(13/20)	90(18/20)	70(14/20)
14	75(15/20)	85(17/20)	75(15/20)	65(13/20)
16	80(16/20)	80(16/20)	60(12/20)	80(16/20)
19	80(16/20)	75(15/20)	85(17/20)	60(12/20)
24	65(13/20)	55(11/20)	60(12/20)	60(12/20)
29	65(13/20)	85(17/20)	60(12/20)	55(11/20)
41	61(11/18)	50(10/20)	45(9/20)	47(9/19)

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

a $\frac{\text{\# males with 2 pregnant females}}{\text{\# males housed with females}} \times 100$ (%)

No value differed significantly from the control by Fisher's exact probability test, $p < 0.05$.

See Tables A-3 through A-13 for individual animal data.

TABLE 8

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Numbers of Corpora Lutea Among Female Rats
Mated with DBCP Exposed Males

Week of Study	ppm DBCP			
	0	0.1	1.0	10
2	15 ± 2 ^a	14 ± 2	15 ± 2	14 ± 2
4	15 ± 2	15 ± 2	15 ± 1	14 ± 2
7	16 ± 1	15 ± 1	15 ± 2	14 ± 2*
10	14 ± 2	15 ± 2	15 ± 3	14 ± 2
12	15 ± 2	15 ± 2	15 ± 2	14 ± 2
14	15 ± 2	14 ± 1*	14 ± 2*	14 ± 2
16	16 ± 1	15 ± 2	14 ± 2*	14 ± 1*
19	14 ± 1	15 ± 2	15 ± 2	14 ± 2
24	14 ± 1	14 ± 1	14 ± 1	15 ± 2
29	14 ± 2	14 ± 2	14 ± 1	15 ± 2
41	14 ± 2	14 ± 2	14 ± 1	14 ± 2

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

^aMean ± S.D. The average number of corpora lutea for the two female rats bred to each male was calculated. Group means were then calculated from these averaged values.

*Significantly different from the control value by Dunnett's test, p < 0.05.

See Tables A-3 through A-13 for individual animal data.

TABLE 9

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Numbers of Implantations Among Female Rats

Mated with DBCP Exposed Males

<u>Week of Study</u>	<u>ppm DBCP</u>			
	<u>0</u>	<u>0.1</u>	<u>1.0</u>	<u>10</u>
2	14 ± 2 ^a	14 ± 1	13 ± 4	13 ± 2
4	13 ± 3	14 ± 3	15 ± 2	13 ± 3
7	15 ± 1	14 ± 2	14 ± 2	13 ± 2*
10	13 ± 3	14 ± 1	13 ± 2	12 ± 3
12	14 ± 2	14 ± 3	14 ± 2	13 ± 2
14	15 ± 1	13 ± 2*	13 ± 2*	14 ± 2*
16	14 ± 4	13 ± 3	13 ± 2	14 ± 3
19	14 ± 2	14 ± 2	14 ± 3	14 ± 1
24	14 ± 1	13 ± 2	14 ± 2	14 ± 1
29	14 ± 1	14 ± 1	14 ± 2	13 ± 1
41	13 ± 2	13 ± 2	13 ± 2	12 ± 2

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

^aMean ± S. D. The average number of implantations for the two female rats bred to each male was calculated. Group means were then calculated from these averaged values.

*Significantly different from the control value by Dunnett's test, $p < 0.05$.

See Tables A-3 through A-13 for individual animal data.

TABLE 10

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
Numbers of Resorptions Among Female Rats Mated
With DBCP Exposed Males

<u>Week of Study</u>	<u>ppm DBCP</u>			
	<u>0</u>	<u>0.1</u>	<u>1.0</u>	<u>10</u>
2	1.1 ± 1.2 ^a	0.9 ± 0.6	0.6 ± 0.7	1.0 ± 1.0
4	0.6 ± 0.6	0.9 ± 1.0	0.9 ± 1.0	1.6 ± 1.4
7	1.1 ± 0.8	1.2 ± 0.9	0.9 ± 0.9	2.6 ± 1.1
10	0.6 ± 0.5	0.7 ± 0.5	0.8 ± 0.8	2.5 ± 1.6
12	0.8 ± 0.8	1.1 ± 1.4	1.2 ± 1.0	2.1 ± 1.2
14	0.6 ± 0.7	0.6 ± 0.7	0.7 ± 0.6	2.3 ± 1.7
16	1.8 ± 3.6	0.8 ± 0.8	1.1 ± 1.2	2.0 ± 1.6
19	0.6 ± 0.4	0.9 ± 1.0	0.4 ± 0.4	1.5 ± 1.2
24	0.6 ± 0.8	0.9 ± 1.0	0.8 ± 0.8	0.6 ± 0.6
29	0.8 ± 0.7	0.4 ± 0.5	0.5 ± 0.7	0.9 ± 1.0
41	0.9 ± 0.9	0.3 ± 0.6	0.5 ± 0.7	0.6 ± 1.0

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

^aMean ± S.D. The average number of resorptions for the two female rats bred to each male was calculated. Group means were then calculated from these averaged values.

Resorption data were transformed into percent and were analyzed statistically using a modified Wilcoxon test.

See Tables A-3 through A-13 for individual animal data.

TABLE 11

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Pre-Implantation Loss Among Female Rats

Mated with DBCP Exposed Males

<u>Week of Study</u>	<u>ppm DBCP</u>			
	<u>0</u>	<u>0.1</u>	<u>1.0</u>	<u>10</u>
2	8 ± 11 ^a	2 ± 4*	16 ± 22	7 ± 7
4	13 ± 14	11 ± 15	5 ± 9 *	14 ± 16
7	7 ± 7	10 ± 12	10 ± 12	13 ± 11 ^b
10	7 ± 10	7 ± 11	12 ± 15	16 ± 22
12	12 ± 10	11 ± 14	8 ± 10*	11 ± 10
14	3 ± 6	6 ± 10	6 ± 7	6 ± 7
16	11 ± 23	12 ± 19	7 ± 13	8 ± 15
19	7 ± 10	6 ± 8	8 ± 14	4 ± 4
24	7 ± 8	6 ± 10	8 ± 10	7 ± 7
29	5 ± 7	5 ± 5	7 ± 11	10 ± 9*
41	8 ± 10	9 ± 10	10 ± 10	6 ± 7

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

$$^a\text{Pre-implantation Loss (\%)} = \frac{\# \text{ Corpora Lutea} - \# \text{ implantation}}{\# \text{ Corpora Lutea}} \times 100$$

The average pre-implantation Loss for the 2 females bred to each male rat was calculated. Group means were then calculated from these averaged values. Values are reported as mean ± standard deviation.

^bp=0.051, modified Wilcoxon test.

*Significantly different from control value by a modified Wilcoxon test, p <0.05.

See Tables A-3 through A-13 for individual animal data.

DO 131120
CONFIDENTIAL

TABLE 12

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Post Implantation Loss Among Female Rats

Mated with DBCP Exposed Males

Week of Study	ppm DBCP			
	0	0.1	1.0	10
2	8 ± 9 ^a	6 ± 4*	8 ± 14	8 ± 7
4	4 ± 4	8 ± 10	7 ± 10	12 ± 10*
7	7 ± 6	10 ± 12	8 ± 7	21 ± 8*
10	5 ± 4	5 ± 3	6 ± 8	21 ± 14*
12	6 ± 6	11 ± 18	9 ± 7	19 ± 14*
14	4 ± 5	4 ± 5	5 ± 5	17 ± 13*
16	7 ± 10	7 ± 8	8 ± 8	16 ± 15*
19	5 ± 3	7 ± 8	3 ± 3	11 ± 9*
24	4 ± 6	8 ± 13	6 ± 6	5 ± 5
29	6 ± 5	3 ± 4*	4 ± 5	7 ± 7
41	8 ± 9	5 ± 8	3 ± 4	6 ± 9

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with 2 unexposed females for a 7-day breeding period during the designated weeks of the study.

^aPost-Implantation Loss (%) = $\frac{\# \text{ resorptions}}{\# \text{ implantations}} \times 100$.

The average post-implantation loss for the 2 females bred to each male rat was calculated. Group means were then calculated from these averaged values. Values are reported as mean ± standard deviation.

*Significantly different from the control value by a modified Wilcoxon Test, p<0.05.

See Tables A-3 through A-13 for individual animal data.

TABLE 13

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Incidence of Alterations Among Litters of Unexposed Female
Rats Bred to DBCP Exposed Males During Week 41
of the Study

	ppm, DBCP			
	0	0.1	1.0	10.0
No. of pups (litters) examined	322(27)	330(26)	307(25)	316(26)
	Number of pups (litters) affected			
Exencephaly and Spina Bifida	1(1) ^a	0(0)	0(0)	0(0)
Short tail	0(0)	1(1)	0(0)	0(0)
Bent tail	0(0)	0(0)	1(1)	0(0)
Sex ratio of fetuses (M:F)	52:48	51:49	49:51	46:54

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with two unexposed females during the 41st week of the study. These females were sacrificed on day 20 of gestation and the fetuses were examined for external alterations and cleft palate.

^aThese alterations were observed in the same litter.

No values differed significantly from the control value by a modified Wilcoxon test, $p < 0.05$.

See Table A-14 for individual animal data.

TABLE 14

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters - Fertility Index and Survival
Indices for Female Rats Exposed To DBCP by Inhalation
(Bred during week 15 and 16 of the study period)

	ppm DBCP			
	0	0.1	1.0	10
No. of females	19 ^a	20	20	20
% (no.) pregnant	74(14)	70(14)	85(17)	75(15)
Live pups, day 0 ^b	6 ± 3	10 ± 3	9 ± 3	7 ± 5
Dead pups, day 0 ^b	0.4 ± 0.8	1.0 ± 2.3	0.8 ± 1.2	0.8 ± 1.1
Average Litter size ^{b,c}	9 ± 3	11 ± 3	10 ± 2	9 ± 5
Live pups, day 1 ^{b,d}	8 ± 2	9 ± 4	9 ± 2	8 ± 4
Gestation survival index (%) ^{b,e}	96 ± 9	92 ± 19	92 ± 12	83 ± 28
1-Day survival index (%) ^{b,f}	98 ± 5	95 ± 14	99 ± 3	94 ± 19
Sex ratio of pups (M:F), day 1	44 : 56	57 : 43	48 : 52	44 : 56

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Following termination of exposures (weeks 15 and 16 of the study) each female was housed with two different unexposed male rats, each for a 5-day period.

^aOne control female died during the 15th week of the study.

^bMean ± standard deviation.

^cTotal number of pups born, alive plus dead.

^dIn some cases, the litter size was greater on day 1 than on day 0 because the dam was still delivering when the data were recorded on day 0.

^eThe percentage of newborn pups that were alive.

^fThe percentage of liveborn pups that survived for one day.

No values were significantly different from the control means by the appropriate statistical test, $p < 0.05$.

See Table A-15 for individual animal data.

TABLE 15

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

DBCP - Exposed Female Rats Bred to Unexposed Male Rats:

Results of External Examination

Of 1-Day Old Pups

(Bred during week 15 and 16 of the study period)

	ppm DBCP			
	0	0.1	1.0	10
No. of pups (litters) examined	108(14)	131(14)	157(17)	118(15)
Number of pups (litters) affected				
Acaudia or short tail	0(0)	1(1)	1(1) ^a	1(1) ^a
Hematoma, umbilical region	0(0)	0(0)	1(1)	0(0)
Runts	0(0)	1(1)	1(1)	0(0)
Emaciated pup	0(0)	0(0)	0(0)	1(1)
Hypothermia as determined by touch	0(0)	5(1)	0(0)	3(1)

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Following termination of exposures (weeks 15 and 16) each female was housed with two different unexposed male rats, each for a 5-day period.

^aThe acaudate or shortened tail pups in the 1 and 10 ppm groups also had imperforate anus.

No value differed significantly from the control value by a modified Wilcoxon test, $p < 0.05$.

See Table A-15 for individual animal data.

TABLE 16

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices
for Female Rats Exposed to DBCP by Inhalation
(Bred during week 33 and 34 of the study period)

	ppm DBCP			
	0	0.1	1.0	10
No. of females	19 ^a	20	20	19 ^a
% (no.) pregnant	42(8)	45(9)	55(11)	53(10)
Live pups, day 0 ^b	4±4	8±4	6±4	5±5
Dead pups, day 0 ^b	0.3±0.5	0.1±0.3	0.4±0.7	0.2±0.4
Average Litter Size ^{b,c}	6±4	8±4	7±4	6±5
Live pups, day 1 ^{b,d}	5±4	8±4	6±4	6±5
Gestation survival index (%) ^{b,e}	95±9	96±11	89±30	83±35
1-Day survival index ^{b,f}	92±22	97±7	100±0	99±3
Sex ratio of pups (M:F), day 1	47:53	56:44	37:63	48:52

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. During weeks 33 and 34 of the study, each female was housed with two different unexposed male rats, each for a 5-day period.

^aOne control female died during the 15th week of the study. One high dose female died during the 32nd week of the study.

^bMean ± standard deviation.

^cTotal number of pups born, alive plus dead.

^dIn some cases, the litter size was greater on day 1 than on day 0 because the dam was still delivering when the data were recorded on day 0.

^eThe percentage of newborn pups that were alive.

^fThe percentage of liveborn pups that survived for one day.

No external malformations were observed in the pups examined.

No values were significantly different from the control means by the appropriate statistical methods, $p < 0.05$.

See Table A-16 for individual animal data.

DO 131125
CONFIDENTIAL

TABLE 17

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

HERITABLE TRANSLOCATION STUDY

Reproductive Parameters for Unexposed Female Rats Mated
with the F₁ Males of DBCP Exposed Male Rats

	ppm DBCP			
	<u>0</u>	<u>0.1</u>	<u>1.0</u>	<u>10.0</u>
Fertility Index ^a	100 (17/17)	94 (16/17)	100 (19/19)	90 (18/20)
Average Corpora Lutea ^b	14±2	14±2	15±1	14±2
Average Implantations ^b	14±2	15±2	13±2	14±2
Average Resorptions ^b	0.6±0.7	0.7±0.6	1.1±1.2	0.5±0.5
Pre-Implantation Loss ^{b,c}	6±9	2±3	11±14	8±11
Post-Implantation Loss ^{b,d}	6±12	5±4	11±13*	4±4

[†]F₀ male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. During the first week post-exposure, each male rat was housed with an unexposed female rat. F₁ males resulting from this mating were raised to maturity and housed with two unexposed females for 7 days.

^aMale Fertility Index (%) = $\frac{\# \text{ fertile males}}{\# \text{ males housed with females}} \times 100$

^bMean ± S.D. The Average value for the two unexposed female rats bred to each F₁ male was calculated. Group means were then calculated from the averaged values.

^cPre-implantation Loss (%) = $\frac{\# \text{ corpora lutea} - \# \text{ implantations}}{\# \text{ corpora lutea}} \times 100$

^dPost-implantation Loss (%) = $\frac{\# \text{ resorptions}}{\# \text{ implantations}} \times 100$

*Significantly different from control value by a modified Wilcoxon test, p<0.05.

See Tabl A-17 for individual animal data.

TABLE 18

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Hematologic Evaluation

Week of Study	ppm DBCP	n	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count (%)				
							Neut	Lymph	Mono	Eosin	Baso
-1	0	5	52 ± 1 ^a	8.6 ± 0.7	16.0 ± 1.0	20.3 ± 4.2	8	89	2	1	0
	0.1	5	49 ± 2	9.0 ± 0.5	15.9 ± 0.4	21.5 ± 1.5	9	85	5	1	0
	1.0	5	50 ± 0.5	8.8 ± 0.2	16.2 ± 0.3	19.9 ± 2.0	10	88	1	1	0
	10.0	5	48 ± 3 [*]	8.8 ± 0.3	15.8 ± 0.5	17.6 ± 3.4	7	88	2	3	0
9	0	5	51 ± 1	8.8 ± 0.5	16.5 ± 0.6	14.8 ± 1.9	11	84	4	1	0
	0.1	5	54 ± 3	9.3 ± 0.5	17.3 ± 1.2	10.6 ± 3.3 [*]	14	83	2	1	0
	1.0	5	50 ± 1	8.8 ± 0.4	16.7 ± 0.5	10.3 ± 1.9 [*]	12	86	1	1	0
	10.0	5	52 ± 2	8.9 ± 0.5	16.6 ± 0.3	10.1 ± 1.4 [*]	16	80	3	1	0
13	0	5	50 ± 2	8.8 ± 0.6	16.6 ± 0.5	19.9 ± 2.9	15	81	2	2	0
	0.1	5	50 ± 3	8.6 ± 0.7	16.6 ± 1.1	17.5 ± 5.3	18	78	2	2	0
	1.0	5	52 ± 2	8.8 ± 0.3	17.2 ± 0.4	14.0 ± 2.2 [*]	11	87	1	1	0
	10.0	5	50 ± 1	8.5 ± 0.2	16.6 ± 0.4	14.2 ± 2.6	19	78	1	2	0

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

^{*}Significantly different from the control value by Dunnett's test, p<0.05.

See Table A-18 for individual animal data.

TABLE 19

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Hematologic Evaluation

Week of Study	ppm DBCP	n	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count (%)				
							Neut	Lymph	Mono	Eosin	Baso
-1	0	5	47 ± 1 ^a	8.0 ± 0.4	14.8 ± 0.5	15.6 ± 4.3	7	90	2	1	0
	0.1	5	45 ± 2	7.8 ± 0.4	14.8 ± 1.0	12.7 ± 0.8	9	88	1	2	0
	1.0	5	49 ± 2	8.2 ± 0.6	15.5 ± 0.8	11.1 ± 1.5*	6	92	1	1	0
	10.0	5	49 ± 3	8.7 ± 0.6	16.2 ± 1.0	11.6 ± 2.3	8	90	1	1	0
9	0	5	50 ± 2	8.5 ± 0.4	16.1 ± 1.1	10.2 ± 1.0	12	86	1	1	0
	0.1	5	48 ± 4	8.2 ± 0.6	16.0 ± 1.0	9.2 ± 1.6	15	80	3	2	0
	1.0	5	50 ± 2	7.9 ± 0.4	16.0 ± 0.4	11.9 ± 2.5*	9	88	2	1	0
	10.0	5	49 ± 2	8.1 ± 0.4	15.9 ± 0.4	14.1 ± 3.1*	11	85	1	3	0
13	0	5	48 ± 4	8.1 ± 0.4	16.1 ± 1.1	13.6 ± 4.7	12	85	1	2	0
	0.1	5	48 ± 2	8.1 ± 0.2	16.0 ± 0.6	11.1 ± 2.7	13	84	1	2	0
	1.0	5	50 ± 3	8.0 ± 0.5	16.4 ± 0.9	11.6 ± 2.6	11	85	2	2	0
	10.0	5	49 ± 2	8.4 ± 0.4	16.9 ± 0.6	12.2 ± 3.4	15	81	2	2	0

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

*Significantly different from the control value by Dunnett's test, p<0.05.

See Table A-19 for individual animal data.

TABLE 20

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male and Female Rat: Prothrombin Time

Sex	Week of Study	ppm DBCP							
		n	0	n	0.1	n	1	n	10
		Prothrombin time (seconds)							
M	9	(5)	19±4 ^a	(5)	22±6	(5)	23±6	(4)	22±11
M	13	(4)	15±1	(5)	16±2	(5)	16±2	(5)	14±1
F	9	(5)	31±5	(5)	20±4	(5)	19±1*	(5)	33±12
F	13	(5)	16±1	(5)	17±2	(5)	16±1	(5)	15±2

[†]Rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

*Significantly different from the control value by Dunnett's test, p < 0.05.

See Table A-20 for individual animal data.

TABLE 21

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male and Female Rat: Clinical Chemistry Values
(14th Week of Study)

<u>Sex</u>	<u>ppm DBCP</u>	<u>n</u>	<u>BUN, mg/100ml</u>	<u>SGPT, mU/ml</u>	<u>AP, mU/ml</u>
M	0	5	18 ± 2 ^a	26 ± 3	58 ± 7
M	0.1	5	19 ± 2	41 ± 35	88 ± 80
M	1.0	5	16 ± 2	29 ± 6	58 ± 18
M	10.0	5	17 ± 3	28 ± 4	67 ± 11
F	0	5	17 ± 2	19 ± 3	47 ± 16
F	0.1	5	17 ± 3	16 ± 3	41 ± 7
F	1.0	5	17 ± 2	18 ± 2	33 ± 4
F	10.0	5	16 ± 2	22 ± 7	56 ± 18

[†]Rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

No value differed significantly from the control value by Dunnett's test, p <0.05.

See Table A-21 for individual animal data.

TABLE 22

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male and Female Rat: FSH and Testosterone levels

<u>Week of Study</u>	<u>Sex</u>	<u>ppm DBCP</u>	<u>n</u>	<u>FSH (nanogram/ml)</u>	<u>Testosterone (nanogram/ml)</u>
4	M	0	5	309 ± 53 ^a	3.5 ± 2.5
	M	0.1	5	324 ± 65	2.8 ± 1.3
	M	1.0	5	283 ± 55	3.4 ± 1.7
	M	10.0	5	392 ± 51	4.3 ± 2.0
14	M	0	5	297 ± 143	0.7 ± 0.3
	M	0.1	5	214 ± 22	2.2 ± 1.4
	M	1.0	5	301 ± 28	1.9 ± 1.2
	M	10.0	5	334 ± 48	1.0 ± 1.0
4	F	0	5	144 ± 30	
	F	0.1	5	147 ± 31	
	F	1.0	5	195 ± 108	
	F	10.0	5	209 ± 71	
14	F	0	5	119 ± 29	
	F	0.1	5	176 ± 78	
	F	1.0	5	116 ± 34	
	F	10.0	5	140 ± 30	

[†]Rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

No value differed significantly from the control value by Dunnett's test, $p < .05$.

See Tables A-22 and A-23 for individual animal data.

TABLE 23

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Urinalysis

<u>Week of Study</u>	<u>ppm DBCP</u>	<u>n</u>	<u>Specific Gravity</u>	<u>pH</u>	<u>Sugar</u>	<u>Protein</u>	<u>Ketones</u>	<u>Bilirubin</u>	<u>Blood</u>	<u>Urobilinogen</u>
9	0	4	1.042 ± 0.002 ^a	6.0 - 7.0	Neg	1+ to 3+	Neg	Neg	Neg	1.0
	0.1	3	1.043 ± 0.012	6.0 - 7.0	Neg	1+ to 3+	Neg	Neg	Neg	1.0
	1.0	4	1.060 ± 0.006 [*]	6.0 - 7.0	Neg	2+ to 3+	Neg	Neg	Neg	1.0
	10.0	3	1.033 ± 0.006	6.5 - 7.0	Neg	1+ to 3+	Neg	Neg	Neg	1.0
13	0	3	1.050 ± 0.010	6.0 - 7.0	Neg	1+ to 3+	Neg	Neg	Neg	1.0
	0.1	2	1.054 ± 0.023	6.0 - 6.5	Neg	2+ to 3+	Neg	Neg	Small(1) ^b	1.0
	1.0	3	1.053 ± 0.013	6.5 - 7.0	Neg	3+	Neg	Neg	Neg	1.0
	10.0	4	1.034 ± 0.014	6.5 - 7.0	Neg	1+ to 4+	Neg	Neg	Neg	1.0
14 ^c	0	5	1.013 ± 0.013	6.0 - 7.0	Neg	Trace to 3+	Neg	Neg	Trace(1) ^b	1.0
	0.1	5	1.047 ± 0.007 [*]	6.0 - 8.0	Neg	3+	Neg	Neg	Neg	1.0
	1.0	4	1.034 ± 0.012 [*]	6.0 - 8.0	Neg	2+ to 3+	Neg	Neg	Neg	1.0
	10.0	5	1.018 ± 0.007	6.0 - 8.0	Neg	2+ to 3+	Neg	Neg	Neg	1.0

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

^b() indicates number of rats affected.

^cDue to difficulty in obtaining urine samples from male rats during the 13th week, additional urine samples were obtained at the time of necropsy in the 14th week.

^{*}Significantly different from the control value by Dunnett's test, p<0.05.

See Table A-24 for individual animal data.

TABLE 24

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Urinalysis

<u>Week of Study</u>	<u>ppm DBCP</u>	<u>n</u>	<u>Specific Gravity</u>	<u>pH</u>	<u>Sugar</u>	<u>Protein</u>	<u>Ketones</u>	<u>Bilirubin</u>	<u>Blood</u>	<u>Urobilinogen</u>
9	0	5	1.038 ± 0.008 ^a	6.0 - 7.0	Neg	Trace to 3+	Neg	Neg	Neg	1.0
	0.1	5	1.050 ± 0.009	6.0 - 6.5	Neg	Trace to 2+	Neg	Neg	Neg	1.0
	1.0	5	1.037 ± 0.008	6.0 - 7.0	Neg	Trace to 2+	Neg	Neg	Neg	1.0
	10.0	5	1.033 ± 0.015	6.0 - 7.0	Neg	Trace to 2+	Neg	Neg	Neg	1.0
13	0	5	1.032 ± 0.010	6.0 - 7.0	Neg	Trace to 2+	Neg	Neg	Neg	1.0
	0.1	5	1.042 ± 0.012	6.0 - 6.5	Neg	Trace to 3+	Neg	Neg	Neg	1.0
	1.0	5	1.033 ± 0.006	5.0 - 7.0	Neg	Trace to 3+	Neg	Neg	Neg	1.0
	10.0	5	1.036 ± 0.005	5.0 - 6.5	Neg	Trace to 2+	Neg	Neg	Neg	1.0

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

No value differed significantly from the control value by Dunnett's test, p<0.05.

See Table A-25 for individual animal data.

TABLE 25

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Organ Weights and Organ/Body Weight Ratios Determined at the
Interim (4 weeks and 14 weeks) and Terminal (46 weeks) Sacrifices

Week of Study	ppm DBCP	n	Body Wt. g	Brain		Heart		Liver		Kidneys		Testes		Epididymides	
				g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
4	0	5	541 ± 40 ^a	1.99±0.05	0.37±0.03	1.63±0.12	0.30±0.02	19.4 ± 1.6	3.59±0.19	3.98±0.12	0.74±0.04	4.37±0.17	0.81±0.04	1.57±0.06	0.29±0.02
4	0.1	5	529 ± 35	1.98±0.08	0.37±0.02	1.59±0.21	0.30±0.02	17.7 ± 2.5	3.34±0.28	3.57±0.51	0.67±0.06	4.23±0.13	0.80±0.07	1.49±0.07	0.28±0.02
4	1.0	5	536 ± 42	2.00±0.08	0.37±0.03	1.51±0.06	0.28±0.01	19.6 ± 3.2	3.64±0.28	3.74±0.27	0.70±0.06	3.97±0.14 ^b	0.74±0.04	1.43±0.09 ^b	0.27±0.03
4	10.0	5	496 ± 30	2.03±0.09	0.41±0.01	1.45±0.12	0.29±0.02	18.8 ± 1.2	3.80±0.15	3.73±0.30	0.75±0.06	4.15±0.09	0.84±0.05	1.51±0.10	0.31±0.02
14	0	5	517 ± 45	1.99±0.03	0.39±0.03	1.57±0.12	0.30±0.01	14.2 ± 1.6	2.75±0.24	3.50±0.42	0.68±0.06	4.04±0.38	0.79±0.13	1.45±0.15	0.28±0.02
14	0.1	5	538 ± 48	2.01±0.06	0.38±0.03	1.67±0.19	0.31±0.03	14.2 ± 1.8	2.63±0.19	3.71±0.48	0.69±0.07	4.15±0.12	0.78±0.06	1.49±0.06	0.28±0.03
14	1.0	5	522 ± 27	2.03±0.11	0.39±0.01	1.69±0.18	0.32±0.04	14.4 ± 1.4	2.75±0.15	3.76±0.48	0.72±0.06	4.19±0.21	0.80±0.04	1.49±0.07	0.29±0.02
14	10.0	5	492 ± 20	1.93±0.06	0.39±0.02	1.48±0.05	0.30±0.02	15.0 ± 1.4	3.04±0.17	3.97±0.29	0.81±0.06 ^b	2.71±0.19 ^b	0.55±0.02 ^b	1.13±0.08 ^b	0.23±0.01 ^b
46	0	17	607 ± 44	2.06±0.06	0.34±0.02	1.86±0.14	0.31±0.02	19.30±2.70	3.18±0.41	5.05±0.83	0.84±0.17	4.41±0.33	0.73±0.05	1.66±0.14	0.27±0.02
46	0.1	19	646 ± 36	2.08±0.06	0.32±0.02	1.86±0.15	0.29±0.02	19.84±2.54	3.07±0.32	4.99±0.59	0.77±0.08	4.60±0.38	0.71±0.08	1.75±0.14	0.27±0.03
46	1.0	18	618 ± 73	2.04±0.09	0.34±0.07	1.86±0.21	0.30±0.03	19.48±3.36	3.16±0.45	5.09±1.11	0.83±0.16	4.48±0.40	0.73±0.10	1.68±0.16	0.28±0.03
46	10.0	20	637 ± 77	2.01±0.07	0.32±0.04	1.94±0.20	0.31±0.04	20.84±3.02	3.27±0.26	5.43±0.67	0.86±0.17	4.13±0.57	0.66±0.08 ^b	1.62±0.24	0.26±0.04

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

^bSignificantly different from the control value by Dunnett's test, p<0.05.

See Table A-26 for individual animal data.

TABLE 26

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rats: Organ Weights and Organ/Body Weight Ratios Determined at the
Interim (4 weeks and 14 weeks) and Terminal (40 weeks) Sacrifices

Week of Study	ppm DBCP	n	Body Wt. g	Brain		Heart		Liver		Kidneys	
				g	g/100g	g	g/100g	g	g/100g	g	g/100g
4	0	5	285 ± 50 ^a	1.77±0.07	0.64±0.12	1.03±0.08	0.37±0.06	11.15±1.38	3.98±0.64	2.24±0.17	0.80±0.14
4	0.1	5	302 ± 11	1.84±0.08	0.61±0.04	0.99±0.04	0.33±0.01	10.19±0.62	3.38±0.21	2.22±0.15	0.74±0.05
4	1.0	5	301 ± 23	1.84±0.08	0.61±0.03	0.99±0.08	0.33±0.02	9.94±1.17	3.30±0.22 ^a	2.24±0.15	0.75±0.05
4	10.0	5	279 ± 20	1.81±0.06	0.65±0.05	0.94±0.09	0.34±0.04	10.08±0.43	3.63±0.34	2.14±0.20	0.77±0.11
14	0	5	303 ± 33	1.81±0.03	0.60±0.07	0.97±0.06	0.32±0.02	7.88±1.02	2.60±0.14	2.11±0.29	0.70±0.04
14	0.1	5	317 ± 28	1.85±0.04	0.59±0.04	1.12±0.11 ^a	0.35±0.03	7.95±0.61	2.51±0.04	2.35±0.17	0.74±0.06
14	1.0	5	284 ± 12	1.82±0.06	0.64±0.03	0.94±0.07	0.33±0.01	7.05±0.42	2.49±0.12	2.16±0.09	0.76±0.03
14	10.0	5	298 ± 14	1.88±0.08	0.63±0.04	1.01±0.06	0.34±0.03	8.43±0.89	2.82±0.19	2.35±0.09	0.79±0.06 ^a
40	0	19	313 ± 23	1.87±0.06	0.60±0.04	1.22±0.08	0.39±0.03	11.34±1.28	3.64±0.47	2.65±0.24	0.85±0.08
40	0.1	20	324 ± 35	1.84±0.07	0.57±0.06	1.17±0.12	0.36±0.04	11.12±1.42	3.44±0.37	2.50±0.18	0.78±0.10
40	1.0	19	295 ± 61	1.85±0.05	0.66±0.19	1.15±0.16	0.40±0.04	10.53±3.26	3.55±0.51	2.52±0.33	0.88±0.17
40	10.0	17	321 ± 36	1.86±0.05	0.59±0.05	1.20±0.10	0.38±0.04	12.23±2.23	3.83±0.75	2.71±0.27	0.85±0.10

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

^{*}Significantly different from the control value by Dunnett's test, p<0.05.

See Table A-27 for individual animal data.

DO 131135
CONFIDENTIAL

TABLE 27

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

GROSS PATHOLOGIC OBSERVATIONS ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level	Male	Female
		(ppm)		
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>GENERAL</u>			
E-1	No visible lesions	0	3	5
		0.1	3	3
		1.0	5	4
		10.0	5	5
	<u>URINARY SYSTEM</u>			
P-3	Mineralization of renal cortex or pelvis	0	0	-
		0.1	2	-
		1.0	0	-
		10.0	0	-
	<u>FEMALE REPRODUCTIVE SYSTEM</u>			
LL-8	Clear fluid distending uterine horn(s)	0	-	0
		0.1	-	2
		1.0	-	1
		10.0	-	0
	<u>INTEGUMENT AND SUBCUTANEOUS</u>			
Q-7	Abscess or inflammation of preputial gland	0	2	-
		0.1	1	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

TABLE 28

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM</u>				
	<u>Testes</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
T-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	3	-
		10.0	4	-
T-3s	Atrophy (decreased spermatogenesis of individual seminiferous tubules, includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	-
	- focal or multifocal, slight	0.1	0	-
		1.0	2	-
		10.0	1	-
	<u>Epididymides</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
E-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	4	-
		10.0	5	-
E-7	Aggregate of mononuclear lymphoid cells, perivascular	0	0	-
	- focal	0.1	0	-
		1.0	1	-
		10.0	0	-
	<u>Prostate</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
Pr-1	No visible lesions	0	4	-
		0.1	3	-
		1.0	4	-
		10.0	4	-
Pr-2, Pr-2m	Aggregate of mononuclear lymphoid cells	0	1	-
	- focal or multifocal, interstitial	0.1	2	-
		1.0	1	-
		10.0	1	-
	<u>Seminal Vesicles</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
SV-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
	<u>Coagulating Gland</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
CG-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-

- Indicates none examined or not applicable.

TABLE 28 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>FEMALE REPRODUCTIVE SYSTEM</u>				
	<u>Ovaries</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
Ov-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Oviducts</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
OD-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Uterus</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
U-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Cervix</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
C-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
<u>NERVOUS SYSTEM</u>				
	<u>Brain</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
B-1	No visible lesions	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM</u>				
	<u>Adrenal Glands</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
A-1	No visible lesions	0	5	5
		0.1	4	5
		1.0	4	5
		10.0	5	5

- Indicates none examined or not applicable.

DO 131138
CONFIDENTIAL

TABLE 28 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 4-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM (cont'd)</u>				
<u>Adrenal Glands (cont'd)</u>				
A-2us	Focus(1) of altered cells, cortex	0	0	0
	- unilateral, slight	0.1	0	0
		1.0	1	0
		10.0	0	0
A-14bs	Increased vacuolization, cortex	0	0	0
	- bilateral, slight	0.1	1	0
		1.0	0	0
		10.0	0	0

- Indicates none examined or not applicable.

TABLE 29

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

GROSS PATHOLOGIC OBSERVATIONS ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ADRENAL GLANDS</u>				
A-4	Unilateral absence of adrenal	0	-	0
		0.1	-	0
		1.0	-	1
		10.0	-	0
<u>EYES</u>				
D-1	Exophthalmus	0	-	1
		0.1	-	0
		1.0	-	0
		10.0	-	0
D-2	Intraocular cloudiness	0	-	1
		0.1	-	0
		1.0	-	0
		10.0	-	0
D-3	Cloudiness of cornea(s)	0	0	0
		0.1	1	1
		1.0	0	0
		10.0	0	0
<u>GENERAL</u>				
E-1	No visible lesions	0	2	3
		0.1	3	4
		1.0	5	4
		10.0	0	4
E-2	Nodule of necrotic omental or mesometrial fat	0	-	2
		0.1	-	0
		1.0	-	0
		10.0	-	0
<u>MALE REPRODUCTIVE SYSTEM</u>				
L-1	Decreased size of testicle(s) with or without mineral-like lesions	0	2	-
		0.1	0	-
		1.0	0	-
		10.0	5	-
L-2	Dark or tan appearance of testes	0	0	-
		0.1	0	-
		1.0	0	-
		10.0	3	-
L-19	Irregular pale area on testicle	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
<u>RESPIRATORY SYSTEM</u>				
M-1	Dark or red focus(1) in lungs	0	0	-
		0.1	1	-
		1.0	0	-
		10.1	1	-

- Indicates none examined or not applicable.

TABLE 29 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

GROSS PATHOLOGIC OBSERVATIONS ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>URINARY SYSTEM</u>			
P-7	Focal dark, depressed foci or area(s) in kidney	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
	<u>INTEGUMENT AND SUBCUTANEOUS</u>			
Q-1-(1)	Subcutaneous mass - inguinal, mammary or midcervical region	0	-	0
		0.1	-	0
		1.0	-	0
		10.0	-	1
Q-4	Abscess of clitoral gland	0	-	1
		0.1	-	0
		1.0	-	0
		10.0	-	0
Q-7	Abscess or inflammation of preputial gland	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

DO 131141
CONFIDENTIAL

TABLE 30

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level		
		(ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
	<u>LIVER</u>			
	Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
L-1	No visible lesions	0	3	4
		0.1	4	3
		1.0	3	5
		10.0	3	4
L-2, L-2s	Aggregates of mononuclear, lymphoid or reticuloendothelial cells - focal or multifocal	0	2	1
		0.1	0	2
		1.0	1	0
		10.0	2	1
L-7s	Biliary hyperplasia	0	0	0
	- focal or multifocal, slight	0.1	1	0
		1.0	0	0
		10.0	0	0
L-10	Coagulation necrosis and inflammation	0	0	0
	- focal	0.1	0	0
		1.0	1	0
		10.0	1	0
L-13m	Chronic active inflammation, portal triads	0	0	0
	- moderate	0.1	1	0
		1.0	0	0
		10.0	0	0
	<u>URINARY SYSTEM</u>			
	<u>Kidneys</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
K-1	No visible lesions	0	1	2
		0.1	1	2
		1.0	1	1
		10.0	0	3
K-2, K-2s	Dilated renal tubules with eosinophilic cast formation	0	2	3
	- focal or multifocal	0.1	2	3
		1.0	3	1
		10.1	2	2
K-3	Basophilic staining renal tubules, cortex	0	1	0
	- focal or multifocal	0.1	1	1
		1.0	0	0
		10.0	1	0
K-4	Mineral deposits, cortex, medulla or corticomedullary junction - focal or multifocal	0	1	1
		0.1	1	3
		1.0	0	1
		10.0	0	0
K-5	Mineral deposits, renal pelvis	0	1	0
	- focal or multifocal	0.1	1	1
		1.0	0	2
		10.0	0	0

- Indicates none examined or not applicable.

DO 131142
CONFIDENTIAL

TABLE 30 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>URINARY SYSTEM (cont'd)</u>				
<u>Kidney (cont'd)</u>				
K-6vs	Chronic progressive glomerulonephropathy - very slight	0	0	0
		0.1	2	0
		1.0	1	1
		10.0	0	0
K-6s	Chronic progressive glomerulonephropathy - slight	0	0	0
		0.1	0	0
		1.0	0	0
		10.1	3	0
K-10	Inflammation, subacute, interstitium	0	0	0
		0.1	0	0
		1.0	0	1
		10.0	0	0
K-11s	Aggregates of mononuclear lymphoid cells, pelvis - focal or multifocal, slight	0	0	0
		0.1	0	1
		1.0	0	0
		10.0	0	0
K-12	Aggregates of mononuclear lymphoid cells, peri-vascular - focal or multifocal	0	0	0
		0.1	0	0
		1.0	0	1
		10.0	0	0
	<u>Urinary Bladder</u> - Number of tissues examined	0	4	5
		0.1	5	4
		1.0	5	4
		10.0	5	5
UB-1	No visible lesions	0	4	5
		0.1	5	4
		1.0	5	4
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM</u>				
	<u>Testes</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
T-1	No visible lesions	0	3	-
		0.1	5	-
		1.0	5	-
		10.0	0	-
T-3s	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells) - focal or multifocal, slight	0	0	-
		0.1	0	-
		1.0	0	-
		10.0	5	-
T-2u, sev	Atrophy (generalized) - unilateral, severe	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

TABLE 30 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>				
<u>Testes (cont'd)</u>				
T-2bsev	Atrophy (generalized) - bilateral, severe	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-4u	Mineralization (intratubular calcification) - multifocal, unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.1	0	-
T-4b	Mineralization (intratubular calcification) - multifocal, bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-6u	Edema, interstitial - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-6b	Edema, interstitial - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-7u	Locally increased multinucleated spermatids - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
T-7b	Locally increased multinucleated spermatids - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
<u>Epididymides - Number of tissues examined</u>				
		0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
E-1	No visible lesions	0	3	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
E-2u	Atrophy - unilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-
E-2b	Atrophy - bilateral	0	1	-
		0.1	0	-
		1.0	0	-
		10.0	0	-

- Indicates none examined or not applicable.

TABLE 30 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>				
<u>Epididymides (cont'd)</u>				
E-3u	Decreased sperm content, tubular lumina	0	1	-
	- unilateral	0.1	0	-
		1.0	0	-
		10.0	0	-
E-3b	Decreased sperm content, tubular lumina	0	1	-
	- bilateral	0.1	0	-
		1.0	0	-
		10.0	0	-
	<u>Seminal Vesicles</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
SV-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
	<u>Coagulating Gland</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	4	-
		10.0	5	-
CG-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	4	-
		10.0	5	-
	<u>Prostate</u> - Number of tissues examined	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	5	-
Pr-1	No visible lesions	0	5	-
		0.1	5	-
		1.0	5	-
		10.0	2	-
Pr-2	Aggregates of mononuclear lymphoid cells	0	0	-
	- focal or multifocal, interstitial	0.1	0	-
		1.0	0	-
		10.0	2	-
Pr-4s	Suppurative inflammation	0	0	-
	- focal, slight	0.1	0	-
		1.0	0	-
		10.0	1	-
<u>FEMALE REPRODUCTIVE SYSTEM</u>				
	<u>Ovaries</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5

- Indicates none examined or not applicable.

TABLE 30 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>				
<u>Ovaries (cont'd)</u>				
Ov-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Oviducts</u> - Number of tissues examined	0	-	4
		0.1	-	5
		1.0	-	5
		10.0	-	5
OD-1	No visible lesions	0	-	4
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Uterus</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
U-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	5
		10.0	-	5
	<u>Cervix</u> - Number of tissues examined	0	-	5
		0.1	-	5
		1.0	-	4
		10.0	-	4
C-1	No visible lesions	0	-	5
		0.1	-	5
		1.0	-	4
		10.0	-	4
<u>NERVOUS SYSTEM</u>				
	<u>Brain</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
B-1	No visible lesions	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM</u>				
	<u>Adrenal Glands</u> - Number of tissues examined	0	5	5
		0.1	5	5
		1.0	4	5
		10.0	5	5
A-1	No visible lesions	0	4	5
		0.1	5	5
		1.0	4	4
		10.0	2	2

- Indicates none examined or not applicable.

DO 131146
CONFIDENTIAL

TABLE 30 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON RATS
FROM THE 14-WEEK INTERIM KILL

Diagnosis Code	Observations	Exposure Level (ppm)	Male	Female
	Number of rats per group	0	5	5
		0.1	5	5
		1.0	5	5
		10.0	5	5
<u>ENDOCRINE SYSTEM (cont'd)</u>				
<u>Adrenal Glands (cont'd)</u>				
A-2us	Focus(1) of altered cells, cortex	0	1	0
	- unilateral, slight	0.1	0	0
		1.0	0	0
		10.0	0	2
A-2bs	Focus(1) of altered cells, cortex	0	0	0
	- bilateral, slight	0.1	0	0
		1.0	0	1
		10.0	3	1
A-5us	Ectatic sinusoids	0	0	0
	- multifocal, unilateral, slight	0.1	0	0
		1.0	0	0
		10.0	0	1

- Indicates none examined or not applicable.

TABLE 31

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ADRENAL GLANDS</u>					
A-2	Mottled adrenal(s) and/or pinpoint focus(1)	0	0	0	0
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	16	16
<u>CARDIOVASCULAR SYSTEM</u>					
B-1	Pale streaks, foci or area(s) in myocardium	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
B-2	Dilatation and inelasticity of aorta and large vessels of heart	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
B-3	Mesenteric or testicular periarteritis with or without thrombosis	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>CENTRAL NERVOUS SYSTEM</u>					
C-1	Darkened, discolored or distorted area in brain	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
<u>EYES</u>					
D-3	Cloudiness of cornea(s)	0	0	1	1
		0.1	0	1	1
		1.0	-	2	2
		10.0	0	3	3
D-4	Cloudiness of lens	0	0	2	2
		0.1	0	1	1
		1.0	-	4	4
		10.0	0	0	0
D-5	Pale focal area on iris	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
D-6	Inflammatory lesion on eyelid	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>GENERAL</u>					
E-1	No visible lesions (NVL)	0	0	5	5
		0.1	0	10	10
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131148
CONFIDENTIAL

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GENERAL (cont'd)</u>					
E-2	Nodule of necrotic omental or mesometrial fat	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0
E-3	Postmortem autolysis	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
E-7	Exudate or porphyrin-like pigment accumulation lateral to external nares or around eyes	0	0	0	0
		0.1	1	0	1
		1.0	-	1	1
		10.0	2	1	3
E-9	Perineal soiling	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
E-10	Depletion of adipose tissue, including serous atrophy of fat	0	1	1	2
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	1	1
E-11	Loss of body condition and/or roughened and dirty hair	0	1	0	1
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
E-12	Excess adipose tissue	0	2	0	2
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
<u>GASTROINTESTINAL SYSTEM</u>					
F-5	Thickened area in nonglandular gastric mucosa suggestive of hyperkeratosis	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
F-6	Absence or decreased normal ingesta in gastrointestinal tract	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
F-8	Small intestinal mass(es) or nodule(s)	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
F-9	Mineralization of gastric wall	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1

- Indicates none examined or not applicable.

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
F-10	Gaseous distention of stomach and/or intestinal tract	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
F-11	Enlarged Peyer's Patch in small intestine	0	0	0	0
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
<u>LIVER</u>					
G-1	Diaphragmatic hernia	0	0	1	1
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
G-2	Solitary to several red or darkened focus(i) or area(s) in liver	0	0	0	0
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	1	1
G-5	Few small pale foci or focus in liver	0	0	0	0
		0.1	0	0	0
		1.0	0	1	1
		10.0	0	0	0
G-7	Enlarged liver	0	2	0	2
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
G-8	Darkened or congested liver	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
G-9	Firm liver	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
G-10	Linear streak(s) or areas in liver	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0
<u>LYMPHORETICULAR SYSTEM</u>					
H-3	Enlarged axillary lymph node(s)	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
H-5	Enlarged renal lymph node(s), color variable and/or firm	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131150
CONFIDENTIAL

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
H-6	Cyst replacing renal lymph node(s)	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
H-7	Mottled renal lymph node(s)	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
<u>MUSCULOSKELETAL SYSTEM</u>					
I-1	Demineralization of bones	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
<u>PANCREAS</u>					
J-1	Nodule(s) in region of pancreas	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
J-2	Slight thickening(s) within pancreas, color pale or dark, but not clearly nodule	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>PITUITARY GLAND</u>					
K-1	Dark, red or hemorrhagic focus(i) on pituitary	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
K-2	Enlarged pituitary	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
K-3	Mottled pituitary	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
K-4	Cyst on pituitary	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
<u>TESTES</u>					
L-1	Decreased size of testicle(s) with or without mineral-like lesions	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	2	2

- Indicates none examined or not applicable.

DO 131151
CONFIDENTIAL

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>TESTES (cont'd)</u>					
L-2	Dark or tan appearance of testes	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
L-5	Increased size of testes	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
L-6	Edematous appearance of testes	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
<u>EPIDIDYMIDES</u>					
L-4	Nodule of necrosis in epididymal fat pad	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
L-7	Abscess or inflammation of epididymides	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
<u>ACCESSORY SEX GLANDS</u>					
L-3	Decreased size of accessory sex glands	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
L-8	Dark focus on prostate	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
L-9	Enlarged prostate	0	0	0	0
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
<u>RESPIRATORY SYSTEM</u>					
M-1	Dark or red focus(1) in lungs	0	0	5	5
		0.1	0	1	1
		1.0	-	10	10
		10.0	0	1	1
M-2	Few pale foci in lungs	0	1	1	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
M-3	Pulmonary congestion or dark color	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
M-4	Pulmonary edema	0	1	0	1
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	0	0
M-5	Mottled appearance of lungs	0	0	0	0
		0.1	1	0	1
		1.0	-	0	0
		10.0	0	1	1
<u>SPLEEN</u>					
N-1	Ectopic splenic tissue	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
N-2	Enlarged spleen	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
<u>PARATHYROID GLANDS</u>					
O-1	Enlarged parathyroids	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
<u>KIDNEYS</u>					
P-1	Moderate to severe chronic renal disease (moderately to severely enlarged, pale, roughened, etc.)	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
P-2	Slight to moderate chronic renal disease (slightly pale, enlarged, roughened, etc.)	0	1	4	5
		0.1	0	2	2
		1.0	-	5	5
		10.0	1	5	6
P-3	Mineralization of renal cortex or pelvis	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
P-7	Focal dark depressed foci or area(s) in kidney	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131153
CONFIDENTIAL

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>KIDNEYS</u> (cont'd)				
P-8	Dilated renal pelvis(es) (hydronephrosis)	0	1	0	1
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
P-9	Mottled appearance of kidney(s)	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
P-10	Cyst(s) in kidney	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	-	1	1
P-19	Pale depressed area on kidney	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
	<u>URINARY BLADDER</u>				
P-6	Organized plug within urinary bladder	0	0	3	3
		0.1	0	1	1
		1.0	-	3	3
		10.0	0	1	1
	<u>INTEGUMENT AND SUBCUTANEOUS</u>				
Q-1(1)	Subcutaneous mass - inguinal, mammary or midcervical region - Number per rat: 1	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	2	2
Q-3(1)	Subcutaneous mass - body or limb region - Number per rat: 1	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Q-6(1)	Cutaneous nodule or mass; body, head or limb region - Number per rat: 1	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Q-6(2)	Cutaneous nodule or mass; body, head or limb region - Number per rat: 2	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Q-7	Abscess or inflammation of preputial gland	0	0	1	1
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	2	2

- Indicates none examined or not applicable.

DO 131154
CONFIDENTIAL

TABLE 31 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON MALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>INTEGUMENT AND SUBCUTANEOUS (cont'd)</u>				
Q-8	Subcutaneous edema	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
Q-9	Abscess of eyelid	0	1	0	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
	<u>THORACIC CAVITY</u>				
S-4	Blood in thoracic cavity	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 32

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>ADRENAL GLANDS</u>					
A-2	Mottled adrenal(s) and/or pinpoint focus(1)	0	0	1	1
		0.1	-	1	1
		1.0	0	4	4
		10.0	1	9	10
A-3	Enlarged adrenal(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	3	3
<u>CENTRAL NERVOUS SYSTEM</u>					
C-1	Darkened, discolored or distorted area in brain	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
C-2	Focal hemorrhage lesions on the meninges	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>EYES</u>					
D-3	Cloudiness of cornea(s)	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>GENERAL</u>					
E-1	No visible lesions (NVL)	0	0	5	5
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	2	2
E-3	Postmortem autolysis	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
E-4	Vaginal discharge	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
E-5	Ascites - cloudy, dark or hemorrhage	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
E-6	Multiple nodules within abdominal cavity (possible pancreatic or mesothelial involvement)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1

- Indicates none examined or not applicable.

DO 131156
CONFIDENTIAL

TABLE 32 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GENERAL (cont'd)</u>					
E-7	Exudate or porphyrin-like pigment accumulation lateral to external nares or around eyes	0	0	0	0
		0.1	-	0	0
		1.0	1	2	3
		10.0	0	0	0
E-8	Diffuse paleness of tissues (anemia)	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
E-9	Perineal soiling	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
E-10	Depletion of adipose tissue, including serous atrophy of fat	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
E-11	Loss of body condition and/or roughened and dirty hair	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
<u>GASTROINTESTINAL SYSTEM</u>					
F-1	Hyperplastic ileitis	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
F-2	Dark (or hemolyzed blood) material in gastrointestinal tract	0	0	0	0
		0.1	-	1	1
		1.0	1	1	2
		10.0	0	0	0
F-3	Ulceration or erosion of gastric mucosa	0	0	0	0
		0.1	-	1	1
		1.0	0	2	2
		10.0	0	0	0
F-4	Edematous gastric wall	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
F-5	Thickened area in nonglandular gastric mucosa, suggestive of hyperkeratosis	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
F-6	Absence or decreased normal ingesta in gastrointestinal tract	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

TABLE 32 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>GASTROINTESTINAL SYSTEM</u> (cont'd)				
F-7	Dry and firm contents of colon - suggestive of dehydration	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
	<u>LIVER</u>				
G-1	Diaphragmatic hernia	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
G-2	Solitary to several red or darkened focus(i) or area(s) in liver	0	0	0	0
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	2	2
G-3	Diffuse paleness of liver	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
G-4	Accentuated lobular pattern of liver	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
G-5	Few small pale foci or focus in liver	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
G-6	Pale area(s) in liver (>5mm in diameter)	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
	<u>LYMPHORETICULAR SYSTEM</u>				
H-1	Dark and congested thoracic lymph nodes	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
H-2	Atrophy of thymus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
H-3	Enlarged axillary lymph node(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
H-4	Mottled thymus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

DO 131158
CONFIDENTIAL

TABLE 32 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>PANCREAS</u>					
J-1	Nodule(s) in region of pancreas	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
<u>PITUITARY GLAND</u>					
K-1	Dark, red or hemorrhagic focus(1) on pituitary	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>FEMALE REPRODUCTIVE SYSTEM</u>					
LL-1	Cyst in ovary	0	0	1	1
		0.1	-	2	2
		1.0	0	0	0
		10.0	0	6	6
LL-2	Endometrial polyp(s)	0	0	1	1
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	0	0
LL-3	Dark or hyperemic appearance to uterus or mesometrial blood vessels	0	0	4	4
		0.1	-	16	16
		1.0	0	13	13
		10.0	0	13	13
LL-4	Mass involving uterus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
LL-5	Cyst(s) in uterus	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
LL-6	Gravid uterus	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
LL-7	Implantation (fetal reabsorption) sites within gravid uterus	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
LL-8	Clear fluid distending uterine horn(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 32 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
LL-9	Distention of and congestion of uterine horns due to endometrial polyp(s)	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
LL-10	Endometrial hyperplasia	0	0	0	0
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	0	0
LL-11	Portion of placenta within vagina	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
<u>RESPIRATORY SYSTEM</u>					
M-1	Dark or red focus(1) in lungs	0	0	3	3
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
M-2	Few pale foci in lungs	0	0	0	0
		0.1	-	1	1
		1.0	1	0	1
		10.0	0	0	0
<u>SPLEEN</u>					
N-1	Ectopic splenic tissue	0	0	1	1
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	1	1
N-2	Enlarged spleen	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
<u>KIDNEY</u>					
P-2	Slight to moderate chronic renal disease (slightly pale, enlarged, roughened, etc.)	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
P-3	Mineralization of renal cortex or pelvis	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
P-4	Pale appearance of kidneys	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	1	1
P-5	Right kidney enlarged containing hemorrhage	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131160
CONFIDENTIAL

TABLE 32 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGICAL OBSERVATIONS ON FEMALE RATS EXPOSED FOR 14 WEEKS
AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>URINARY BLADDER</u>					
P-6	Organized plug within urinary bladder	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>INTEGUMENT AND SUBCUTANEOUS</u>					
Q-1(1)	Subcutaneous mass - inguinal, mammary or midcervical region	0	0	5	5
	- number per rat: 1	0.1	-	4	4
		1.0	0	3	3
		10.0	3	2	5
Q-1(2)	Subcutaneous mass - inguinal, mammary or midcervical region	0	0	0	0
	- number per rat: 2	0.1	-	0	0
		1.0	0	0	0
		10.0	0	3	3
Q-4	Abscess of clitoral gland	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
Q-5	Galactocoele formation	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
Q-6	Cutaneous nodule or mass - body, head or limb region	0	0	0	0
	- number per rat: 1	0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
<u>SALIVARY GLAND</u>					
R-1	Enlarged salivary glands with or without purulent material or hemorrhage	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
<u>THORACIC CAVITY</u>					
S-1	Hydrothorax	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
<u>TONGUE</u>					
T-1	Mass involving tongue	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131161
CONFIDENTIAL

TABLE 33

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ENDOCRINE SYSTEM</u>					
	<u>Adrenal Glands</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	19	20
		10.0	2	18	20
A-1	No visible lesions	0	3	2	5
		0.1	0	3	3
		1.0	-	1	1
		10.0	0	0	0
A-2u, A-2us, A-8	Focus(1) of altered cells, cortex - unilateral	0	0	11	11
		0.1	1	8	9
		1.	-	9	9
		10.0	0	4	4
A-2b, A-2bs	Focus(1) of altered cells, cortex - bilateral	0	0	4	4
		0.1	0	8	8
		1.0	-	9	9
		10.0	0	11	11
A-3	Thrombus, adrenal blood vessel	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
A-4u	Nodular hyperplasia, cortex - multifocal, unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
A-4b, A-4bm, A-8b	Nodular hyperplasia, cortex - multifocal, bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	2	16	18
A-5u, A-5us	Ectatic sinusoids - multifocal, unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	3	3
A-5b	Ectatic sinusoids - multifocal, bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
A-6, A-6u	Hematocyst, cortex - unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	2	2
A-6b A-11b	Hematocyst, cortex - bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	2	2

- Indicates none examined or not applicable.

DO 131162
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ENDOCRINE SYSTEM (cont'd)</u>					
<u>Adrenal Glands (cont'd)</u>					
A-7u	Pheochromocytoma - unilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
A-9s, A-9u, A-9us	Nodular hyperplasia, medulla - focal, unilateral	0	0	0	0
		0.1	0	1	1
		1.0	-	1	1
		10.0	0	2	2
A-10s	Aggregate of mononuclear lymphoid cells, cortex - slight	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>Pituitary</u> - Number of tissues examined		0	2	15	17
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	18	20
P-1	No visible lesions	0	2	9	11
		0.1	1	-	1
		1.0	-	0	0
		10.0	1	14	15
P-2	Cyst	0	0	2	2
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	1	1
P-3, P-3s	Focus(1) of altered cells anterior portion	0	0	4	4
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	2	2
P-4	Adenoma, anterior portion	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	1	1	2
P-5s	Pigmented (golden brown) macrophages, pars intermedia - focal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	1	1
<u>Pineal Gland</u> - Number of tissues examined		0	0	1	1
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	0	0
PI-1	No visible lesions	0	-	1	1
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	-	-

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ENDOCRINE SYSTEM (cont'd)</u>					
	<u>Thyroid Gland</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Th-1	No visible lesions	0	3	14	17
		0.1	0	-	0
		1.0	-	-	-
		10.0	2	14	16
Th-2a	Hyperplasia, parafollicular cells (C-cell) - focal, slight	0	0	2	2
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	3	3
Th-3	Medullary thyroid carcinoma - solitary	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Th-4m	Cervical blood vessels near thyroid, periarteritis - multifocal, moderate	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Th-5	Ultimobranchial cyst	0	0	0	0
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	1	1
	<u>Parathyroid Glands</u> - Number of tissues examined	0	3	14	17
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	14	16
PG-1	No visible lesions	0	2	13	15
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	14	15
PG-2, PG-2b	Hyperplasia - bilateral	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
PG-3m	Atrophy - moderate	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
<u>GASTROINTESTINAL SYSTEM</u>					
	<u>Tongue</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
TG-1	No visible lesions	0	1	12	13
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	15	16

- Indicates none examined or not applicable.

DO 131164
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Tongue (cont'd)</u>					
TG-2, TG-2s	Periarteritis - focal or multifocal	0	1	1	2
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	2	2
TG-3	Medial calcification, small arterioles, secondary to severe chronic renal disease	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
TG-4s	Aggregate of mononuclear lymphoid cells - focal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
TG-5s	Chronic active inflammation, submucosa - multifocal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
TG-6s	Subacute inflammation, submucosa - focal or multifocal, slight	0	0	2	2
		0.1	0	-	0
		1.1	-	-	-
		10.0	0	0	0
TG-7, TG-7s	Foreign body granuloma or subacute inflammation, submucosa - focal	0	0	0	0
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	1	1
<u>Salivary Glands - Number of tissues examined</u>					
		0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	17	19
SG-1	No visible lesions	0	3	16	19
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	17	19
<u>Esophagus - Number of tissues examined</u>					
		0	3	15	18
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	16	18
Es-1	No visible lesions	0	3	15	18
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	16	18

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
	<u>Stomach</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
S-1	No visible lesions	0	1	15	16
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	16	17
S-2, S-2s	Cystic dilatation, base of crypts, glandular portion	0	1	1	2
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
S-3	Transmural calcification, glandular portion, secondary to severe chronic renal disease	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
S-4	Submucosal edema, nonglandular portion	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
S-5	Diffuse acanthosis and hyperkeratosis, mucosa	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	-	1	1
S-2	Aggregate of mononuclear lymphoid cells, submucosa, glandular portion - focal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Small Intestine</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	17	19
SI-1	No visible lesions	0	3	16	19
		0.1	0	-	0
		1.0	-	-	-
		10.0	2	17	19
SI-2	Mucinous adenocarcinoma	0	0	0	0
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	0	0
	<u>Cecum</u> - Number of tissues examined	0	1	17	18
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	17	17

- Indicates none examined or not applicable.

DO 131166
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Cecum (cont'd)</u>					
Ce-1	No visible lesions	0	1	14	15
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	17	17
Ce-2	Intraluminal nematode parasites consistent with pinworms	0	0	3	3
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	0	0
	<u>Large Intestine</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
LI-1	No visible lesions	0	3	10	13
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	11	12
LI-2	Intraluminal nematode parasites consistent with pinworms	0	0	6	6
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	7	7
LI-3	Medial calcification of small arterioles, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
	<u>Liver</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
L-1	No visible lesions	0	1	1	2
		0.1	1	0	1
		1.0	-	1	1
		10.0	0	0	0
L-2, L-2vs, L-2s	Aggregates of mononuclear lymphoid cells or reticuloendothelial cells - focal or multifocal	0	1	3	4
		0.1	0	0	0
		1.0	-	2	2
		10.0	1	2	3
L-3	Congestion	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-4vs	Vacuolization consistent with fatty change - focal or multifocal, very slight	0	0	2	2
		0.1	0	1	1
		1.0	-	6	6
		10.0	0	6	6

- Indicates none examined or not applicable.

DO 131167
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Liver (cont'd)</u>					
L-4s	Vacuolization consistent with fatty change	0	1	8	9
	- focal or multifocal, slight	0.1	0	12	12
		1.0	-	9	9
		10.0	1	8	9
L-4m	Vacuolization consistent with fatty change	0	0	0	0
	- focal or multifocal, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
L-5vs	Extramedullary hematopoiesis	0	0	1	1
	- focal or multifocal, very slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-5s	Extramedullary hematopoiesis	0	0	4	4
	- focal or multifocal, slight	0.1	0	9	9
		1.0	-	9	9
		10.0	0	9	9
L-6, L-6s, L-6m	Focus(i) of altered hepatocytes	0	0	6	6
		0.1	0	7	7
		1.0	-	8	8
		10.0	0	14	14
L-19s	Area of altered hepatocytes	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
L-7s	Biliary hyperplasia	0	0	2	2
	- focal or multifocal, slight	0.1	0	2	2
		1.0	-	2	2
		10.0	0	2	2
L-8	Herniated portion of liver, nodular	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-9vs	Subacute inflammation	0	0	1	1
	- focal, very slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
L-9s	Subacute inflammation	0	0	0	0
	- focal, slight	0.1	0	3	3
		1.0	-	1	1
		10.0	0	1	1
L-12s	Atrophy, hepatic cords, centrilobular region	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
<u>Liver (cont'd)</u>					
L-13s	Chronic active inflammation, portal triads	0	0	0	0
	- slight	0.1	0	2	2
		1.0	-	0	0
		10.0	0	0	0
L-14s	Dilated (telangiectatic) sinusoids	0	0	0	0
	- slight	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
L-15s	Sclerosis, portal triad	0	0	0	0
	- slight	0.1	0	1	1
		1.0	-	1	1
		10.0	0	0	0
L-18s	Periarteritis, portal triads	0	0	0	0
	- focal, slight	0.1	0	0	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Pancreas</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	18	20
Pa-1	No visible lesions	0	1	11	12
		0.1	1	-	1
		1.0	-	0	0
		10.0	2	12	14
Pa-2vs, Pa-2s	Atrophy, with or without inflammation, acinar cells - focal or multifocal	0	2	6	8
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	4	4
Pa-3	Medial calcification, pancreatic arteries, secondary to severe chronic renal disease - multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
Pa-5, Pa-5sev	Periarteritis - focal or multifocal	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	1	1
Pa-6s	Fibrosis, interstitial	0	0	0	0
	- focal, slight	0.1	0	-	0
		1.0	-	0	0
		10.0	0	1	1
<u>RESPIRATORY SYSTEM</u>					
	<u>Nasal Turbinates</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20

- Indicates none examined or not applicable.

DO 131169
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Nasal Turbinates (cont'd)</u>					
NT-1	No visible lesions	0	1	2	3
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
NT-2vs, NT-2s	Aggregates of mononuclear lymphoid cells, submucosa - focal or multifocal	0	1	14	15
		0.1	0	-	1
		1.0	-	-	-
		10.0	1	17	18
NT-3, NT-3s	Suppurative (acute) rhinitis - focal or multifocal, slight	0	1	0	1
		0.1	1	-	1
		1.0	-	-	-
		10.0	0	1	1
NT-3sev	Suppurative (acute) rhinitis - focal or multifocal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
NT-4s	Chronic active inflammation - focal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
NT-5	Malignant schwannoma - primary	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
NT-6	Fibrous osteodystrophy, probably secondary to severe chronic renal disease	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
NT-7s	Acute inflammation with or without necrosis, mucosa and submucosa of olfactory portion of the dorsal medial turbinates	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	2	2
NT-8	Adenocarcinoma	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	2	2
	<u>Trachea - Number of tissues examined</u>	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Tr-1	No visible lesions	0	3	14	17
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	16	18
Tr-2s	Subacute inflammation, submucosa - multifocal, slight	0	0	2	2
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0

-Indicates none examined or not applicable.

DO 131170
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Trachea (cont'd)</u>					
Tr-3s	Periarteritis, submucosa	0	0	0	0
	- focal, slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Tr-4	Aggregate of mononuclear lymphoid cells, submucosa - focal	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
<u>Lungs - Number of tissues examined</u>					
		0	3	17	20
		0.1	1	1	2
		1.0	0	19	19
		10.0	2	18	20
Lu-2, Lu-2s	Aggregates of mononuclear lymphoid cells, peribronchial - focal or multifocal	0	3	17	20
		0.1	1	1	2
		1.0	-	19	19
		10.0	0	18	18
Lu-3s	Aggregates of mononuclear lymphoid cells, perivascular - focal or multifocal	0	1	8	9
		0.1	0	1	1
		1.0	-	2	2
		10.0	0	5	5
Lu-7s	Aggregates of mononuclear lymphoid cells, subpleural - focal or multifocal	0	1	1	2
		0.1	1	0	1
		1.0	-	3	3
		10.0	0	0	0
Lu-10s	Aggregates of mononuclear lymphoid cells, interstitial - focal or multifocal	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Lu-4	Generalized congestion	0	3	0	3
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-5	Edema, perivascular - focal or multifocal	0	2	0	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-6s	Alveolar histiocytosis	0	1	7	8
	- focal or multifocal, slight	0.1	0	1	1
		1.0	-	3	3
		10.0	0	3	3
Lu-8s	Subacute inflammation, interstitial	0	0	2	2
	- focal or multifocal, slight	0.1	0	0	0
		1.0	-	4	4
		10.0	0	0	0

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Lungs (cont'd)</u>					
Lu-9s	Granulomatous inflammation - focal, slight	0	0	1	1
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
Lu-11s	Chronic inflammation, bronchiole - slight	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Lu-12s	Cholesterol clefts - focal, slight	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
Lu-13s	Microgranuloma - focal, slight	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
Lu-14	Mineralization, alveolar septae, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-15	Mineralization, pleura - multifocal, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-16	Chronic inflammation, pleura - multifocal, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-17	Hemorrhage - multifocal, secondary to severe chronic renal disease	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
Lu-18s	Chronic active inflammation - multifocal	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
<u>NERVOUS SYSTEM</u>					
<u>Peripheral Nerve - Number of tissues examined</u>					
		0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
PN-1	No visible lesions	0	3	10	13
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	9	11

- Indicates none examined or not applicable.

DO 131172
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>NERVOUS SYSTEM (cont'd)</u>					
<u>Peripheral Nerve (cont'd)</u>					
FN-2vs	Peripheral neuropathy	0	0	4	4
	- very slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	4	4
FN-2s	Peripheral neuropathy	0	0	3	3
	- slight	0.1	0	-	0
		1.0	-	-	-
		10.0	0	5	5
	<u>Spinal Cord</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
SC-1	No visible lesions	0	3	17	20
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	18	20
	<u>Brain</u> - Number of tissues examined	0	3	17	20
		0.1	1	18	19
		1.0	0	20	20
		10.0	2	18	20
B-1	No visible lesions	0	3	17	20
		0.1	1	18	19
		1.0	-	19	19
		10.0	1	3	4
B-2	Malignant schwannoma, infiltrating from primary site in nasal turbinates.	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
B-3s, B-3b, B-3bs	Mineralization, cerebrum	0	0	0	0
	- focal or multifocal	0.1	0	0	0
		1.0	-	0	0
		10.0	0	15	15
B-4	Granular cell tumor located in meninges, cerebrum, dorsal surface	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
B-5m	Vacuolization and degeneration of the cerebellum, midbrain, and cerebrum	0	0	0	0
	- multifocal, moderate	0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
<u>MUSCULOSKELETAL SYSTEM</u>					
	<u>Skeletal Muscle</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	17	19

- Indicates none examined or not applicable.

DO 131173
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MUSCULOSKELETAL SYSTEM (cont'd)</u>					
<u>Skeletal Muscle (cont'd)</u>					
SM-1	No visible lesions	0	3	17	20
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	17	19
	<u>Vertebral Bone</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
VB-1	No visible lesions	0	2	17	19
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	18	19
VB-2, VB-2s	Fibrous osteodystrophy, secondary to severe chronic renal disease	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
	<u>Vertebral Bone Marrow</u>	0	3	17	20
	Number of tissues examined	0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
VBM-1	No visible lesions	0	3	17	20
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	18	20
<u>URINARY SYSTEM</u>					
	<u>Kidneys</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
K-4us, K-4s	Mineral deposits, cortex, medulla or corticomedullary junction	0	0	1	1
	- focal or multifocal, unilateral	0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
K-4b	Mineral deposits, cortex, medulla or corticomedullary junction	0	1	0	1
	- focal or multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
K-5us	Mineral deposits, renal pelvis	0	0	5	5
	- focal or multifocal, unilateral	0.1	0	2	2
		1.0	-	4	4
		10.0	0	2	2

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>URINARY SYSTEM (cont'd)</u>					
<u>Kidneys (cont'd)</u>					
K-5b,	Mineral deposits, renal pelvis	0	0	0	0
K-5bs	- focal of multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
K-6s,	Chronic progressive glomerulonephropathy	0	1	9	10
K-6bs	- slight	0.1	0	11	11
		1.0	-	11	11
		10.0	1	6	7
K-6m,	Chronic progressive glomerulonephropathy	0	0	6	6
K-6bm	- moderate	0.1	1	8	9
		1.0	-	8	8
		10.0	0	10	10
K-6sev,	Chronic progressive glomerulonephropathy	0	2	2	4
K-6bs,sev	- severe	0.1	0	0	0
		1.0	-	1	1
		10.0	1	2	3
K-11us	Aggregates of mononuclear lymphoid cells, pelvis	0	0	1	1
	- focal or multifocal, unilateral, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
K-13us	Vacuolization, pelvic epithelium	0	0	0	0
	- unilateral, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
K-14us	Hyperplasia, pelvic epithelium	0	0	1	1
	- unilateral, slight	0.1	0	0	0
		1.0	-	2	2
		10.0	0	2	2
K-16	Cyst, cortex	0	0	0	0
		0.1	0	0	0
		1.0	-	2	2
		10.0	0	0	0
K-17us	Hydrocephrosis - unilateral, slight	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
K-18	Adenoma, cortex	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
K-24	Focus or (pleomorphic) basophilic cells	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

DO 131175
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>URINARY SYSTEM (cont'd)</u>					
	<u>Urinary Bladder</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	17	19
UB-1	No visible lesions	0	3	17	20
		0.1	1	19	20
		1.0	-	20	20
		10.0	2	17	19
<u>CARDIOVASCULAR SYSTEM</u>					
	<u>Heart</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
H-1	No visible lesions	0	1	14	15
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	14	15
H-2s, H-5s, H-6s	Myocardial degeneration with or without inflammation - focal or multifocal, slight	0	2	1	3
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	4	5
H-3	Medial calcification, coronary arteries, secondary to severe chronic renal disease - multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
H-4vs	Aggregate of mononuclear lymphoid cells - focal or multifocal, very slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
H-4s	Aggregate of mononuclear lymphoid cells - focal or multifocal, slight	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
	<u>Anterior Mediastinal Blood Vessels</u>	0	3	17	20
	Number of tissues examined	0.1	1	0	1
		1.0	0	1	1
		10.0	2	17	19
ABV-1	No visible lesions	0	1	16	17
		0.1	1	-	1
		1.0	-	0	0
		10.0	1	15	16
ABV-2, ABV-2s, ABV-2m	Periarteritis - focal or multifocal	0	1	1	2
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	2	2

-Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>CARDIOVASCULAR SYSTEM (cont'd)</u>					
<u>Anterior Mediastinal Blood Vessels (cont'd)</u>					
ABV-3	Medial calcification, secondary to severe chronic renal disease	0	1	0	1
	- multifocal	0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
	<u>Cervical Blood Vessels</u>	0	0	0	0
	Number of tissues examined	0.1	1	0	1
		1.0	0	0	0
		10.0	0	0	0
CBV-2	Periarteritis - multifocal	0	-	-	-
		0.1	1	-	1
		1.0	-	-	-
		10.0	-	-	-
	<u>Mesenteric Blood Vessels</u>	0	3	17	20
	Number of tissues examined	0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
MBV-1	No visible lesions	0	1	17	18
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	18	19
MBV-2	Periarteritis - focal or multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
MBV-3	Subintimal mineralization, secondary to severe chronic renal disease	0	2	0	2
	- focal or multifocal	0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
<u>ABDOMINAL CAVITY</u>					
	<u>Mesenteric Fat - Number of tissues examined</u>	0	3	17	20
		0.1	1	1	2
		1.0	0	1	1
		10.0	2	18	20
MF-1	No visible lesions	0	3	17	20
		0.1	1	0	1
		1.0	-	0	0
		10.0	1	18	19
MF-2	Atrophy	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
O-2	Strangulated (necrotic) fat	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>ABDOMINAL CAVITY (cont'd)</u>					
<u>Mesenteric Fat (cont'd)</u>					
0-3	Necrosis and chronic inflammation of fat	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
<u>HEAD REGION</u>					
<u>Ear - Number of tissues examined</u>					
		0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	1	1
EA-2	Squamous cell carcinoma, probably zymbal gland origin	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	1	1
<u>Eyes - Number of tissues examined</u>					
		0	3	17	20
		0.1	1	2	3
		1.0	0	6	6
		10.0	2	17	19
EY-1	No visible lesions	0	2	15	17
		0.1	0	2	2
		1.0	-	5	5
		10.0	0	16	16
EY-2b, EY-2bs, EY-2bm	Keratitis with increased corneal vascularization - bilateral	0	1	0	1
		0.1	1	0	1
		1.0	-	0	0
		10.0	1	0	1
EY-4um	Corneal vascularization and chronic inflammation - unilateral, moderate	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	0	0
EY-3us, EY-3um	Retinal atrophy and degeneration - unilateral	0	0	2	2
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
<u>MALE REPRODUCTION SYSTEM</u>					
<u>Testes - Number of tissues examined</u>					
		0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
T-1	No visible lesions	0.1	1	12	13
		0.1	1	14	15
		1.0	-	15	15
		10.0	1	5	6

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Testes (cont'd)</u>					
T-2um	Atrophy (generalized)	0	0	1	1
	- unilateral, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
T-2bm	Atrophy (generalized)	0	0	0	0
	- bilateral, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
T-2u,sev	Atrophy (generalized)	0	0	0	0
	- unilateral, severe	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-3u,vs	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	1	1
	- unilateral, very slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
T-3us	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	1	1
	- unilateral, slight	0.1	0	2	2
		1.0	-	5	5
		10.0	0	8	8
T-3bs	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	1	1
	- bilateral, slight	0.1	0	1	1
		1.0	-	0	0
		10.0	0	4	4
T-3um	Atrophy (decreased spermatogenesis of individual seminiferous tubules - includes individual seminiferous tubules containing predominantly sertoli cells)	0	0	0	0
	- focal or multifocal, unilateral, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-4us	Mineralization (intratubular calcification)	0	0	2	2
	- unilateral, slight	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
T-4um	Mineralization (intratubular calcification)	0	0	0	0
	- unilateral, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-4b,	Mineralization (intratubular calcification)	0	0	0	0
T-4bs	- multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2

-Indicates none examined or not applicable.

DO 131179
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Testes (cont'd)</u>					
T-5b	Periarteritis	0	2	0	2
	- focal or multifocal, bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
T-5bm	Periarteritis	0	0	0	0
	- focal or multifocal, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
T-6um	Edema, interstitial	0	0	0	0
	- unilateral, moderate	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
T-6u,sev	Edema, interstitial	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
T-8u	Interstitial cell tumor	0	0	1	1
	- unilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0
	<u>Epididymides</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
E-1	No visible lesions	0	3	16	19
		0.1	1	17	18
		1.0	-	19	19
		10.0	1	14	15
E-3um	Decreased sperm content in tubular lumina	0	0	0	0
	- unilateral, moderate	0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
E-3u,sev	Decreased sperm content in tubular lumina	0	0	1	1
	- unilateral, severe	0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
E-3b	Decreased sperm content in tubular lumina	0	0	0	0
	- bilateral	0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
E-4s	Sperm granuloma - slight	0	0	1	1
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	0	0

-Indicates none examined or not applicable.

DO 131180
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Epididymides (cont'd)</u>					
E-5u	Increased cellular debris in tubular lumina - unilateral	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
E-5b	Increased cellular debris in tubular lumina - bilateral	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
E-6, E-6u	Periarteritis - focal	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	1	1
E-7us	Aggregate of mononuclear lymphoid cells, perivascular - focal, unilateral, slight	0	0	0	0
		0.1	0	0	0
		1.0	-	1	1
		10.0	0	1	1
	<u>Prostate Gland</u> - Number of tissues examined	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	1	17	18
PR-1	No visible lesions	0	1	3	4
		0.1	0	3	3
		1.0	-	5	5
		10.0	0	2	2
PR-3, PR-3s, PR-3m	Corpora amylacea-like bodies - focal or multifocal	0	2	14	16
		0.1	1	16	17
		1.0	-	15	15
		10.0	1	15	16
PR-5s	Papillary hyperplasia, glands - focal, slight	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	0	1	1
PR-6s	Hyperplasia, glands - focal, slight	0	0	0	0
		0.1	0	1	1
		1.0	-	0	0
		10.0	0	0	0
	<u>Coagulating Gland</u>	0	3	17	20
	Number of tissues examined	0.1	1	18	19
		1.0	0	20	20
		10.0	2	16	18
CG-1	No visible lesions	0	3	17	20
		0.1	1	18	19
		1.0	-	20	20
		10.0	1	15	16

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Coagulating Gland (cont'd)</u>					
CG-2	Atrophy	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
	<u>Seminal Vesicles</u>	0	3	17	20
	Number of tissues examined	0.1	1	18	19
		1.0	0	20	20
		10.0	2	17	19
SV-1	No visible lesions	0	3	17	20
		0.1	1	18	19
		1.0	-	20	20
		10.0	1	16	17
SV-2	Atrophy	0	0	0	0
		0.1	0	0	0
		1.0	-	0	0
		10.0	1	1	2
SV-3	Corpora amylacea-like bodies	0	0	0	0
	- focal or multifocal	0.1	0	0	0
		1.0	-	0	0
		10.0	1	0	1
	<u>Preputial Gland - Number of tissues examined</u>	0	0	1	1
		0.1	0	1	1
		1.0	0	1	1
		10.0	0	2	2
PPG-2s, PPG-2m, PPG-2sev	Chronic inflammation	0	-	1	1
	- multifocal	0.1	-	1	1
		1.0	-	0	0
		10.0	-	1	1
PPG-3m, PPG-3sev	Cystic dilatation, ducts	0	-	1	1
		0.1	-	1	1
		1.0	-	0	0
		10.0	-	1	1
PPG-4	Abscess	0	-	0	0
		0.1	-	0	0
		1.0	-	1	1
		10.0	-	1	1
<u>LYMPHORETICULAR SYSTEM</u>					
	<u>Thymus - Number of tissues examined</u>	0	2	15	17
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	17	19
TY-2m	Atrophy - moderate	0	2	15	17
		0.1	1	-	1
		1.0	-	1	1
		10.0	1	17	18

- Indicates none examined or not applicable.

DO 131182
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
	<u>LYMPHORETICULAR SYSTEM (cont'd)</u>				
	<u>Thymus (cont'd)</u>				
TY-2sev	Atrophy - severe	0	0	0	0
		0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
	<u>Spleen</u> - Number of tissues examined	0	3	17	20
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Sp-1	No visible lesions	0	2	17	19
		0.1	1	-	1
		1.0	-	-	-
		10.0	2	15	17
Sp-2m	Hemosiderosis - moderate	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
Sp-3	Ectopic spleen, near adrenal or in omentum	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Sp-4s	Periarteritis - focal, slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Sp-5s	Increased extramedullary hematopoiesis, red pulp - slight	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Mesenteric Lymph nodes</u>	0	3	16	19
	Number of tissues examined	0.1	1	0	1
		1.0	0	1	1
		10.0	2	16	18
MLN-1	No visible lesions	0	2	12	14
		0.1	1	-	1
		1.0	-	0	0
		10.0	1	16	17
MLN-2	Free and phagocytized red cells in the sinusoids	0	0	3	3
		0.1	0	-	0
		1.0	-	0	0
		10.0	1	0	1
MLN-3s	Sinus histiocytosis	0	0	1	1
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131183
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Mesenteric Lymph Nodes (cont'd)</u>					
MLN-4	Reactive hyperplasia	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	0	0
MLN-5	Plasmacytosis of the medullary cords	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	0	0
<u>Pancreatic Lymph Nodes</u>					
	Number of tissues examined	0	0	2	2
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	1	1
Pa-4	No visible lesions	0	-	2	2
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	0	0
Pa-7	Free and phagocytized red cells, medullary sinuses	0	-	0	0
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	1	1
<u>Renal Lymph Nodes</u>					
	Number of tissues examined	0	0	2	2
		0.1	0	1	1
		1.0	0	0	0
		10.0	0	0	0
K-20sev	Cystic dilatation, sinusoids - severe	0	-	2	2
		0.1	-	0	0
		1.0	-	-	-
		10.0	-	-	-
K-21	Free and phagocytized red cells, medullary sinuses	0	-	0	0
		0.1	-	1	1
		1.0	-	-	-
		10.0	-	-	-
K-22	Histiocytosis, medullary sinuses	0	-	0	0
		0.1	-	1	1
		1.0	-	-	-
		10.0	-	-	-
K-23	Accumulations of hematogenous pigment (hemosiderin)	0	-	0	0
		0.1	-	1	1
		1.0	-	-	-
		10.0	-	-	-
<u>Anterior Mediastinal Lymph Nodes</u>					
	Number of tissues examined	0	2	17	19
		0.1	1	0	1
		1.0	0	1	1
		10.0	2	18	20

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Anterior Mediastinal Lymph Nodes (cont'd)</u>					
ALN-1	No visible lesions	0	2	10	12
		0.1	1	-	1
		1.0	-	0	0
		10.0	2	16	18
ALN-2	Free and phagocytized red cells in the medullary sinuses	0	0	6	6
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	2	2
ALN-3, ALN-3s	Hematogenous pigment (hemosiderin), medullary sinuses	0	0	4	4
		0.1	0	-	0
		1.0	-	0	0
		10.0	0	0	0
ALN-4	Sinus histiocytosis	0	0	0	0
		0.1	0	-	0
		1.0	-	1	1
		10.0	0	0	0
<u>Axillary Lymph Nodes</u>					
	Number of tissues examined	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	0	1	1
AX-2	Reactive hyperplasia	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	1	1
<u>Subcutaneous Lymph Nodes</u>					
	Number of tissues examined	0	0	5	5
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	8	9
SLN-1	No visible lesions	0	-	5	5
		0.1	-	-	-
		1.0	-	-	-
		10.0	1	8	9
<u>Lymph Nodes - (origin undetermined)</u>					
	Number of tissues examined	0	0	0	0
		0.1	1	0	1
		1.0	0	0	0
		10.0	0	1	1
LN-1	No visible lesions	0	-	-	-
		0.1	0	-	0
		1.0	-	-	-
		10.0	-	1	1
LN-2	Free and phagocytized red cells in the medullary sinuses	0	-	-	-
		0.1	1	-	1
		1.0	-	-	-
		10.0	-	0	0

- Indicates none examined or not applicable.

DO 131185
CONFIDENTIAL

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Lymph Nodes - (orig. undeterm.) (cont'd)</u>					
LN-3	Hematogenous pigment accumulations, medullary sinuses	0	-	-	-
		0.1	1	-	1
		1.0	-	-	-
		10.0	-	0	0
<u>SKIN AND SUBCUTANEOUS</u>					
	<u>Skin</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Sk-1	No visible lesions	0	2	15	17
		0.1	1	-	1
		1.0	-	-	-
		10.0	1	17	18
Sk-2	Granulomatous inflammation, eyelid - focal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
Sk-3	Squamous papilloma	0	0	1	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	0	0
Sk-4	Chronic active inflammation and fibrosis, eyelid	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
Sk-5	Epidermal inclusion cyst	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
Sk-6	Squamous cell carcinoma with secondary cutaneous metastasis	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	1	1
	<u>Subcutaneous</u> - Number of tissues examined	0	3	16	19
		0.1	1	0	1
		1.0	0	0	0
		10.0	2	18	20
Sq-1	Subcutaneous arteries, medial calcification, secondary to severe chronic renal disease - multifocal	0	1	0	1
		0.1	0	-	0
		1.0	-	-	-
		10.0	1	0	1
Sq-2	Fibroma	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.0	0	2	2

- Indicates none examined or not applicable.

TABLE 33 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	3	17	20
		0.1	1	19	20
		1.0	0	20	20
		10.0	2	18	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Subcutaneous (cont'd)</u>					
Sq-3	Lipoma	0	0	0	0
		0.1	0	-	0
		1.0	-	-	-
		10.1	0	1	1
	<u>Mammary Gland</u> - Number of tissues examined	0	3	12	15
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	15	16
MG-1	No visible lesions	0	0	0	0
		0.1	-	-	-
		1.0	-	-	-
		10.0	0	1	1
MG-2s	Acinar hyperplasia - slight	0	3	11	14
		0.1	-	-	-
		1.0	-	-	-
		10.0	1	14	15
MG-3s	Ductal hyperplasia - slight	0	0	1	1
		0.1	-	-	-
		1.0	-	-	-
		10.0	0	0	0

- Indicates none examined or not applicable.

TABLE 34

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>ENDOCRINE SYSTEM</u>					
	<u>Adrenals</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
A-1	No visible lesions	0	1	4	5
		0.1	-	6	6
		1.0	0	4	4
		10.0	0	0	0
A-2s, A-2u, A-2us	Focus(1) of altered cells, cortex - unilateral	0	0	8	8
		0.1	-	10	10
		1.0	0	6	6
		10.0	1	1	2
A-2b, A-2bs	Focus(1) of altered cells, cortex - bilateral	0	0	6	6
		0.1	-	3	3
		1.0	0	6	6
		10.0	0	3	3
A-4u, A-4us	Nodular hyperplasia, cortex - multifocal, unilateral	0	0	1	1
		0.1	-	0	0
		1.0	0	4	4
		10.0	0	1	1
A-4b	Nodular hyperplasia, cortex - multifocal, bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	3	3
		10.0	3	14	17
A-5u	Ectatic sinusoids - multifocal, unilateral	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
A-5b	Ectatic sinusoids - multifocal, bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	1	2
A-6u, A-11u, A-11us	Hematocyst, cortex - unilateral	0	0	0	0
		0.1	-	1	1
		1.0	0	3	3
		10.0	0	4	4
A-6b, A-11b	Hematocyst, cortex - bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	1	12	13

- Indicates none examined or not applicable.

DO 131188
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>ENDOCRINE SYSTEM (cont'd)</u>					
A-12bs	Necrosis, cortex	0	0	0	0
	- bilateral, slight	0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
A-13bs	Extramedullary hematopoiesis, cortex	0	0	0	0
	- bilateral, slight	0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
	<u>Pituitary</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	0	1
		10.0	3	16	19
P-1	No visible lesions	0	1	17	18
		0.1	-	1	1
		1.0	1	-	1
		10.0	3	16	19
P-3	Focus or foci of altered cells, anterior portion	0	0	1	1
		0.1	-	0	0
		1.0	0	-	0
		10.0	0	0	0
P-4	Adenoma, anterior portion	0	0	1	1
		0.1	-	0	0
		1.0	0	-	0
		10.0	0	0	0
	<u>Thyroid Gland</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
TH-1	No visible lesions	0	1	17	18
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	13	15
TH-5, TH-5s	Ultimobranchial cyst	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	3	3
TH-6, TH-6s	Parafollicular cell (C-cell) hyperplasia	0	0	1	1
	- focal	0.1	-	-	-
		1.0	0	-	0
		10.0	1	2	3
	<u>Parathyroid Glands</u>	0	1	18	19
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	13	16

- Indicates none examined or not applicable.

DO 131189
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>Parathyroid Glands</u> (cont'd)				
PG-1	No visible lesions	0	1	17	18
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	13	16
PG-4	Altered cells - focal	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
	<u>GASTROINTESTINAL SYSTEM</u>				
	<u>Tongue</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	1	2
		10.0	3	17	20
TG-1	No visible lesions	0	1	11	12
		0.1	-	-	-
		1.0	1	0	1
		10.0	1	14	15
TG-2	Periarteritis - focal or multifocal	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
TG-4s.	Aggregate of mononuclear lymphoid cells - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
TG-6s	Subacute inflammation, submucosa - focal or multifocal, slight	0	0	7	7
		0.1	-	-	-
		1.0	0	0	0
		10.0	1	0	1
TG-7, TG-7s	Foreign body granuloma or subacute inflammation, submucosa - focal	0	0	1	1
		0.1	-	-	-
		1.0	0	0	0
		10.0	1	0	1
TG-8-s	Fibrosis and suppurative inflammation, lacrimal ducts of tongue - focal, slight	0	0	1	1
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	0	0
TG-9	Increased number of mast cells, musculature	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
TG-10	Squamous cell carcinoma	0	0	0	0
		0.1	-	-	-
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131190
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
	<u>Salivary Glands</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	0	0	0
		10.0	3	17	20
SG-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	-	-	-
		10.0	3	17	20
	<u>Esophagus</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	14	17
ES-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	14	17
	<u>Stomach</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	2	3
		10.0	3	17	20
S-1	No visible lesions	0	1	18	19
		0.1	-	1	1
		1.0	1	0	1
		10.0	3	13	16
S-2s	Cystic dilatation, base of crypts, glandular portion - slight	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	4	4
S-4	Submucosal edema, nonglandular mucosa	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
S-7	Hyperkeratosis, nonglandular portion	0	0	0	0
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
S-8	Ulcer, nonglandular portion	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
S-9	Subacute inflammation, nonglandular portion	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131191
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>					
	<u>Small Intestine</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
SI-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	16	19
SI-3	Acute inflammation, serosal surface	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>Cecum</u> - Number of tissues examined	0	0	17	17
		0.1	0	0	0
		1.0	0	0	0
		10.0	2	12	14
CE-1	No visible lesions	0	-	11	11
		0.1	-	-	-
		1.0	-	-	-
		10.0	2	11	13
CE-2	Intraluminal nematode parasites consistent with pinworms	0	-	6	6
		0.1	-	-	-
		1.0	-	-	-
		10.0	0	1	1
	<u>Large Intestine</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
LI-1	No visible lesions	0	1	16	17
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	16	19
LI-2	Intraluminal nematode parasite consistent with a pinworm	0	0	3	3
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>LIVER</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
L-1	No visible lesions	0	0	7	7
		0.1	-	9	9
		1.0	0	7	7
		10.0	0	6	6

- Indicates none examined or not applicable.

DO 131192
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>LIVER</u> (cont'd)				
L-2s	Aggregates of mononuclear lymphoid or reticuloendothelial cells - focal or multifocal	0	1	3	4
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	1	1
L-4s	Vacuolization consistent with fatty change - focal or multifocal, slight	0	0	6	6
		0.1	-	7	7
		1.0	0	4	4
		10.0	2	8	10
L-4m	Vacuolization consistent with fatty change - focal or multifocal, moderate	0	1	0	1
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
L-5s	Extramedullary hematopoiesis - focal or multifocal, slight	0	0	5	5
		0.1	-	4	4
		1.0	0	6	6
		10.0	2	4	6
L-6, L-6s	Focus or foci of altered hepatocytes	0	0	1	1
		0.1	-	1	1
		1.0	0	3	3
		10.0	0	1	1
L-19	Area of altered hepatocytes - focal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
L-7s	Biliary hyperplasia - focal or multifocal, slight	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
L-9s	Subacute inflammation - focal, slight	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
L-10s	Coagulation necrosis and inflammation - focal, slight	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
L-17	Altered tinctorial properties to various portions of the liver lobules	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
L-20s	Individual hepatocellular necrosis, centrilobular - multifocal	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	2	0	2

- Indicates none examined or not applicable.

DO 131193
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>LIVER</u> (cont'd)				
L-21sev	Coagulation necrosis and atrophy, sinusoids - severe	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
	<u>PANCREAS</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
PA-1	No visible lesions	0	1	16	17
		0.1	-	-	-
		1.0	1	-	1
		10.0	1	13	14
PA-2, PA-2s	Atrophy, with or without inflammation, acinar cells - focal or multifocal	0	0	3	3
		0.1	-	-	-
		1.0	0	-	0
		10.0	2	1	3
PA-9	Cystic duct with associated fibrosis and chronic-active inflammation	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	0	1
PA-10s	Increased cytoplasmic secretory material - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
PA-12s	Subacute inflammation - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
PA-13	Aggregates of mononuclear lymphoid cells, interstitium	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>RESPIRATORY SYSTEM</u>				
	<u>Nasal Turbinates</u>	0	1	19	20
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
NT-1	No visible lesions	0	1	0	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
NT-2s	Aggregates of mononuclear lymphoid cells, submucosa - focal or multifocal	0	0	13	13
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	15	18

- Indicates none examined or not applicable.

DO 131194
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Nasal Turbinates (cont'd)</u>					
NT-7,	Acute inflammation, with or without	0	0	4	4
NT-7s	necrosis, mucosa and submucosa,	0.1	-	-	-
	olfactory portion, dorsal medial	1.0	0	-	0
	turbinates	10.0	0	4	4
NT-9	Ulceration, olfactory epithelium with	0	0	1	1
	or without adherent exudative	0.1	-	-	-
	material, dorsal medial turbinates	1.0	0	-	0
		10.0	0	1	1
NT-10s	Subacute inflammation, respiratory	0	0	2	2
	epithelium	0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
NT-11,	Subacute inflammation, olfactory epithelium,	0	0	9	9
NT-11s	dorsal medial turbinates	0.1	-	-	-
		1.0	0	-	0
		10.0	0	9	9
NT-12	Chronic active inflammation, with squamous	0	0	0	0
	metaplasia, olfactory epithelium,	0.1	-	-	-
	dorsal medial turbinates	1.0	0	-	0
		10.0	1	0	1
NT-13	Acute (suppurative) or subacute metaplasia	0	0	0	0
	and cuboidalization, olfactory epithelium,	0.1	-	-	-
	dorsal medial turbinates	1.0	0	-	0
		10.0	0	4	4
NT-14s	Suppurative inflammation associated with	0	0	0	0
	a foreign body	0.1	-	-	-
	- focal, slight	1.0	0	-	0
		10.0	0	1	1
	<u>Trachea</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
TR-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	13	16
TR-2s	Subacute inflammation, submucosa	0	0	1	1
	- multifocal, slight	0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Trachea (cont'd)</u>					
TR-2a	Subacute inflammation, submucosa	0	0	0	0
	- multifocal, moderate	0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
TR-4s	Aggregate of mononuclear lymphoid cells, submucosa - focal, slight	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	2	2
	<u>Lungs</u> - Number of tissues examined	0	1	19	20
		0.1	0	2	2
		1.0	1	2	3
		10.0	3	17	20
LU-2s	Aggregates of mononuclear lymphoid cells, peribronchial	0	1	19	20
	- focal or multifocal, slight	0.1	-	1	1
		1.0	1	2	3
		10.0	3	17	20
LU-3, LU-3s	Aggregates of mononuclear lymphoid cells, perivascular - focal or multifocal	0	0	10	10
		0.1	-	1	1
		1.0	0	0	0
		10.0	1	6	7
LU-7s	Aggregates of mononuclear lymphoid cells, subpleural - focal or multifocal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
LU-4	Generalized congestion	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
LU-5m	Edema, perivascular	0	0	0	0
	- focal or multifocal	0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
LU-6s	Alveolar histiocytosis	0	0	8	8
	- slight	0.1	-	1	1
		1.0	0	1	1
		10.0	0	3	3
LU-8s	Subacute inflammation, interstitial	0	0	1	1
	- focal or multifocal, slight	0.1	-	0	0
		1.0	0	1	1
		10.0	0	2	2
LU-19	Mineralization - focal	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131196
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>RESPIRATORY SYSTEM (cont'd)</u>					
<u>Lungs (cont'd)</u>					
LU-20a	Granuloma - focal, slight	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
LU-21	Medial hypertrophy, pulmonary artery - focal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
<u>NERVOUS SYSTEM</u>					
<u>Peripheral Nerve</u>					
	Number of tissues examined	0	1	15	16
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
PN-1	No visible lesions	0	1	15	16
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	16	19
	<u>Spinal Cord</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
SC-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>Brain</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	18	19
		10.0	3	17	20
B-1	No visible lesions	0	1	19	20
		0.1	-	20	20
		1.0	1	17	18
		10.0	1	12	13
B-3, B-3b	Mineralization, cerebrum - focal or multifocal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	5	6
B-6	Glial cell tumor	0	0	0	0
		0.1	-	0	0
		1.0	0	1	1
		10.0	1	0	1

- Indicates none examined or not applicable.

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>MUSCULOSKELETAL SYSTEM</u>					
<u>Skeletal Muscle</u>					
	Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
SM-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>Vertebral Bone</u> - Number of tissues examined	0	1	18	19
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
VB-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>Vertebral Bone Marrow</u>	0	1	18	19
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
VBM-1	No visible lesions	0	1	18	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	17	19
VBM-2	Myeloid hyperplasia	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	0	1
<u>URINARY SYSTEM</u>					
	<u>Kidneys</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
K-1	No visible lesions	0	0	1	1
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	0	0
K-2us	Dilated renal tubules with eosinophilic cast formation - focal or multifocal, unilateral, slight	0	0	1	1
		0.1	-	2	2
		1.0	1	1	2
		10.0	1	0	1
K-2bs	Dilated renal tubules with eosinophilic cast formation - focal or multifocal, bilateral, slight	0	0	3	3
		0.1	-	1	1
		1.0	0	1	1
		10.0	0	1	1

- Indicates none examined or not applicable.

DO 131198
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>URINARY SYSTEM (cont'd)</u>					
<u>Kidneys (cont'd)</u>					
K-3us	Basophilic staining renal tubules	0	0	1	1
	- unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
K-3bs	Basophilic staining renal tubules	0	0	1	1
	- bilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
K-4s, K-4us, K-4m	Mineral deposits, cortex, medulla, or corticomedullary junction	0	1	3	4
	- focal or multifocal, unilateral	0.1	-	2	2
		1.0	0	3	3
		10.0	2	4	6
K-4b, K-4bs	Mineral deposits, cortex, medulla, or corticomedullary junction	0	0	6	6
	- focal or multifocal, bilateral	0.1	-	3	3
		1.0	0	4	4
		10.0	1	4	5
K-5s, K-5us	Mineral deposits, renal pelvis	0	0	4	4
	- focal or multifocal	0.1	-	2	2
		1.0	0	2	2
		10.0	0	2	2
K-5b	Mineral deposits, renal pelvis	0	0	0	0
	- focal or multifocal, bilateral	0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
K-6vs, K-6bvs	Chronic progressive glomerulonephropathy	0	0	0	0
	- very slight	0.1	-	2	2
		1.0	0	4	4
		10.0	0	1	1
K-6s, K-6bs	Chronic progressive glomerulonephropathy	0	0	9	9
	- slight	0.1	-	11	11
		1.0	0	8	8
		10.0	2	13	15
K-6bm	Chronic progressive glomerulonephropathy	0	0	0	0
	- moderate	0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
K-8us	Inflammation, subacute, renal pelvis	0	0	1	1
	- unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
K-9us	Inflammation, subacute, cortex	0	0	1	1
	- unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131199
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>URINARY SYSTEM (cont'd)</u>					
<u>Kidneys (cont'd)</u>					
K-10us	Inflammation, subacute, interstitium	0	0	0	0
	- unilateral, slight	0.1	-	0	0
		1.0	0	1	1
		10.0	0	0	0
K-10bs	Inflammation, subacute, interstitium	0	0	0	0
	- bilateral, slight	0.1	-	1	1
		1.0	0	1	1
		10.0	0	1	1
K-11us	Aggregates of mononuclear lymphoid cells, pelvis	0	0	1	1
	- focal or multifocal, unilateral, slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
K-15s	Lipomatosis, cortex	0	0	0	0
	- slight	0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
K-19u	Transitional cell carcinoma	0	1	0	1
	- unilateral	0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
	<u>Urinary Bladder</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	19	20
		10.0	3	15	18
UB-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	19	20
		10.0	3	15	18
<u>CARDIOVASCULAR SYSTEM</u>					
	<u>Heart</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
H-1	No visible lesions	0	0	18	18
		0.1	-	-	-
		1.0	0	-	0
		10.0	2	14	16
H-2s, H-6s	Myocardial degeneration, with or without inflammation - focal or multifocal, slight	0	1	1	2
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	1	2

- Indicates none examined or not applicable.

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>CARDIOVASCULAR SYSTEM (cont'd)</u>					
<u>Heart (cont'd)</u>					
H-7s	Mineralization, myocardium	0	0	0	0
	- multifocal, slight	0.1	-	-	-
		1.0	1	-	1
		10.0	0	0	0
H-8s	Endomyocardial disease, left ventricle	0	0	0	0
	- slight	0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>Anterior Mediastinal Blood Vessels</u>	0	1	19	20
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
ABV-1	No visible lesions	0	0	19	19
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	15	17
ABV-2	Periarteritis, small arterioles	0	0	0	0
	- focal or multifocal	0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1
ABV-4	Medial calcification, aorta	0	1	0	1
	- multifocal	0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
	<u>Mesenteric Blood Vessels</u>	0	1	19	20
	Number of tissues examined	0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
MBV-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
<u>ABDOMINAL CAVITY</u>					
<u>Abdominal Cavity</u>					
AC-1	Lymphosarcoma, abdominal cavity, mesentery and serosal surface of numerous organs	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	0	1
	<u>Mesenteric Fat - Number of tissues examined</u>	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20

- Indicates none examined or not applicable.

DO 131201
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>ABDOMINAL CAVITY (cont'd)</u>				
	<u>Mesenteric Fat (cont'd)</u>				
MF-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	16	18
MF-2	Atrophy	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
MF-3	Diffuse atrophy with mononuclear cell inflammation	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	0	1
	<u>HEAD REGION</u>				
	<u>Eyes</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	17	20
EY-1	No visible lesions	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	17	20
	<u>FEMALE REPRODUCTIVE SYSTEM</u>				
	<u>Uterus</u> - Number of tissues examined	0	1	19	20
		0.1	0	19	19
		1.0	1	19	20
		10.0	3	17	20
U-1	No visible lesions	0	0	4	4
		0.1	-	2	2
		1.0	0	5	5
		10.0	2	5	7
U-3, U-3s, U-3bs	Cystic endometrial hyperplasia - slight	0	0	8	8
		0.1	-	6	6
		1.0	0	3	3
		10.0	0	4	4
U-3bm	Cystic endometrial hyperplasia - moderate	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
U-4, U-4s	Squamous metaplasia	0	0	4	4
		0.1	-	6	6
		1.0	0	3	3
		10.0	0	0	0
U-4bm	Squamous metaplasia - bilateral	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0

Tissues not examined or not applicable

 DO 131202
 CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Uterus (cont'd)</u>					
U-5	Endometrial stromal polyp with focal necrosis and inflammation	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
U-7, U-7u	Endometrial stromal polyp	0	0	1	1
		0.1	-	0	0
		1.0	0	2	2
		10.0	0	0	0
U-6, U-6s	Hematogenous pigment	0	0	9	9
		0.1	-	11	11
		1.0	0	10	10
		10.0	0	8	8
U-8sev	Granulomatous and necrotic placentitis - severe	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
U-9	Hemorrhage, mesometrial fat - multifocal	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
U-10s	Suppurative endometritis - focal, slight	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
U-11sev	Suppurative inflammation and necrosis - transmural, severe	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
U-12	Placenta with severe coagulation necrosis	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	0	0	0
U-13sev	Transmural endometritis - focal, severe	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	0	1
	<u>Cervix</u> - Number of tissues examined	0	1	16	17
		0.1	0	19	19
		1.0	1	17	18
		10.0	3	15	18
C-1	No visible lesions	0	1	16	17
		0.1	-	18	18
		1.0	1	17	18
		10.0	3	15	18

- Indicates none examined or not applicable.

DO 131203
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Cervix (cont'd)</u>					
C-2	Well-differentiated stromal cell sarcoma, submucosa of cervix	0	0	0	0
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	0	0
	<u>Ovaries</u> - Number of tissues examined	0	1	19	20
		0.1	0	20	20
		1.0	1	18	19
		10.0	3	17	20
OV-1	No visible lesions	0	0	18	18
		0.1	-	19	19
		1.0	0	18	18
		10.0	2	10	12
OV-2u	Cyst - unilateral	0	0	1	1
		0.1	-	1	1
		1.0	0	0	0
		10.0	0	6	6
OV-2b	Cyst - bilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
OV-3	Prominent corpora lutea - multifocal	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
OV-4	Hemorrhage, mesovarial fat - focal	0	1	0	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	0	0
	<u>Oviducts</u> - Number of tissues examined	0	1	18	19
		0.1	0	17	17
		1.0	1	16	17
		10.0	3	14	17
OD-1	No visible lesions	0	1	18	19
		0.1	-	17	17
		1.0	1	16	17
		10.0	3	13	16
OD-2u	Cavernous hemangiosarcoma of the oviduct and uterine horn - unilateral	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
	<u>Clitoral Gland</u> - Number of tissues examined	0	0	0	0
		0.1	0	0	0
		1.0	0	1	1
		10.0	0	0	0

- Indicates none examined or not applicable.

DO 131204
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>FEMALE REPRODUCTIVE SYSTEM (cont'd)</u>					
<u>Clitoral Gland (cont'd)</u>					
CL-1u	Abscess - unilateral	0	-	-	-
		0.1	-	-	-
		1.0	-	1	1
		10.0	-	-	-
CL-2u	Dilated duct, filled with keratinous debris - unilateral	0	-	-	-
		0.1	-	-	-
		1.0	-	1	1
		10.0	-	-	-
<u>LYMPHORETICULAR SYSTEM</u>					
	<u>Thymus</u> - Number of tissues examined	0	1	19	20
		0.1	0	0	0
		1.0	1	0	1
		10.0	2	16	18
TY-1	No visible lesions	0	0	0	0
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
TY-2m	Atrophy - moderate	0	1	19	20
		0.1	-	-	-
		1.0	1	-	1
		10.0	2	15	17
TY-3s	Epithelial hyperplasia - focal, slight	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
	<u>Spleen</u> - Number of tissues examined	0	1	19	20
		1.0	0	0	0
		1.0	1	1	2
		10.0	3	17	20
SP-1	No visible lesions	0	0	19	19
		0.1	-	-	-
		1.0	0	1	1
		10.1	0	8	8
SP-3	Ectopic spleen, near adrenal or in omentum	0	0	1	1
		0.1	-	-	-
		1.0	0	1	1
		10.0	0	2	2
SP-5s	Increased extramedullary hematopoiesis - slight	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>					
<u>Spleen (cont'd)</u>					
SP-5m	Increased extramedullary hematopoiesis - moderate	0	1	0	1
		0.1	-	-	-
		1.0	0	0	0
		10.0	2	0	2
SP-5sev	Increased extramedullary hematopoiesis - severe	0	0	0	0
		0.1	-	-	-
		1.0	1	0	1
		10.0	0	0	0
SP-6, SP-6s	Increased hematogenous pigment, red pulp	0	0	0	0
		0.1	-	-	-
		1.0	0	0	0
		10.0	1	7	8
SP-7sev	Lymphoid depletion, splenic follicles - severe	0	0	0	0
		0.1	-	-	-
		1.0	1	0	1
		10.0	0	0	0
<u>Mesenteric Lymph Nodes</u>		0	1	18	19
Number of tissues examined		0.1	0	0	0
		1.0	1	0	1
		10.0	3	16	19
MLN-1	No visible lesions	0	1	15	16
		0.1	-	-	-
		1.0	1	-	1
		10.0	3	14	17
MLN-2	Free and phagocytized red cells, sinusoids	0	0	1	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
MLN-3	Sinus histiocytosis	0	0	2	2
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	1	1
<u>Pancreatic Lymph Nodes</u>		0	0	0	0
Number of tissues examined		0.1	0	0	0
		1.0	0	0	0
		10.0	0	2	2
PA-7	Free and phagocytized red cells, medullary sinuses of pancreatic lymph nodes	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	2	2

- Indicates none examined or not applicable.

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>LYMPHORETICULAR SYSTEM (cont'd)</u>				
	<u>Pancreatic Lymph Nodes (cont'd)</u>				
PA-11	Hematogenous pigment, medullary sinuses of pancreatic lymph nodes	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.0	-	2	2
	<u>Anterior Mediastinal Lymph Nodes</u>				
	Number of tissues examined	0	1	17	18
		0.1	0	0	0
		1.0	1	0	1
		10.0	3	14	17
ALN-1	No visible lesions	0	0	12	12
		0.1	-	-	-
		1.0	1	-	1
		10.0	1	10	11
ALN-2, ALN-2m	Free and phagocytized red cells in the medullary sinuses	0	1	4	5
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	2	3
ALN-3, ALN-3s, ALN-3m	Hematogenous pigment (hemosiderin), medullary sinuses	0	0	4	4
		0.1	-	-	-
		1.0	0	-	0
		10.0	1	2	3
ALN-4	Sinus histiocytosis	0	1	0	1
		0.1	-	-	-
		1.0	0	-	0
		10.0	0	0	0
	<u>Cervical Lymph Nodes</u>				
	Number of tissues examined	0	0	0	0
		0.1	0	0	0
		1.0	0	0	0
		10.0	1	0	1
CLN-1	No visible lesions	0	-	-	-
		0.1	-	-	-
		1.0	-	-	-
		10.1	1	-	1
	<u>Subcutaneous Lymph Nodes</u>				
	Number of tissues examined	0	1	6	7
		0.1	0	0	0
		1.0	0	0	0
		10.0	2	9	11
SLN-1	No visible lesions	0	1	6	7
		0.1	-	-	-
		1.0	-	-	-
		10.0	2	9	11
	<u>SKIN AND SUBCUTANEOUS</u>				
	<u>Skin</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	0	1
		10.0	2	17	19

- Indicates none examined or not applicable.

DO 131207
CONFIDENTIAL

TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
	<u>SKIN AND SUBCUTANEOUS (cont'd)</u>				
	<u>Skin (cont'd)</u>				
SK-1	No visible lesions	0	1	19	20
		0.1	-	0	0
		1.0	1	-	1
		10.0	2	17	19
SK-5	Epidermal inclusion cyst	0	0	0	0
		0.1	-	1	1
		1.0	0	-	0
		10.0	0	0	0
	<u>Subcutaneous</u> - Number of tissues examined	0	1	19	20
		0.1	0	1	1
		1.0	1	0	1
		10.0	2	17	19
SQ-6	Undifferentiated sarcoma	0	0	1	1
		0.1	-	0	0
		1.0	0	-	0
		10.0	0	0	0
	<u>Mammary Gland</u>	0	1	19	20
	Number of tissues examined	0.1	0	4	4
		1.0	1	4	5
		10.0	3	16	19
MG-2s	Acinar hyperplasia - slight	0	1	4	5
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	5	5
MG-3s	Ductal hyperplasia - slight	0	0	17	17
		0.1	-	0	0
		1.0	0	0	0
		10.0	2	11	13
MG-5	Diffuse acinar hyperplasia associated with a latter stage of pregnancy	0	0	0	0
		0.1	-	0	0
		1.0	1	0	1
		10.0	1	0	1
MG-6	Intraductal nodular hyperplasia with associated periductal connective tissue - focal	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
SQ-4	Fibroadenoma, mammary gland origin	0	0	4	4
		0.1	-	4	4
		1.0	0	4	4
		10.0	2	4	6
SQ-4(2)	Fibroadenoma, mammary gland origin, 2 in number	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

~ Indicates none examined or not applicable.

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TABLE 34 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON FEMALE RATS
EXPOSED FOR 14 WEEKS AND THEN HELD FOR UP TO 26 WEEKS OF RECOVERY

Diagnosis Code	Observations	Exposure Level (ppm)	Died or Killed Moribund During Recovery Period	Terminal Kill	Cumulative Results
	Number of rats per group	0	1	19	20
		0.1	0	20	20
		1.0	1	19	20
		10.0	3	17	20
<u>SKIN AND SUBCUTANEOUS (cont'd)</u>					
<u>Mammary Gland (cont'd)</u>					
SQ-5	Galactocoele formation, mammary gland origin	0	0	1	1
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1
SQ-7	Papillary adenocarcinoma, mammary gland origin	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	1	1	2
SQ-8	Adenocarcinoma, mammary gland origin	0	0	0	0
		0.1	-	0	0
		1.0	0	0	0
		10.0	0	1	1

- Indicates none examined or not applicable.

TABLE 35

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

CAUSE OF DEATH OR MORIBUND CONDITION OF RATS
DYING OR KILLED MORIBUND DURING THE RECOVERY PERIOD

<u>Pathology No.</u>	<u>Sex</u>	<u>Exposure Conc. (ppm)</u>	<u>Weeks After Last Exposure</u>	<u>Possible or Probable Cause of Death or Illness</u>
77-7471	M	0	28	Obesity and sudden death
77-7477	M	0	27	Obesity and sudden death
77-7487	M	0	23	Renal failure from severe chronic progressive renal disease.
77-7557	M	0.1	31	Obesity and sudden death. Also had a small mucinous adenocarcinoma of the small intestine.
77-7680	M	10	23	Malignant schwannoma in the nasal turbinates with local invasion to brain.
77-7683	M	10	32	Renal failure from severe chronic progressive renal disease.
77-7423	F	0	2	Nonmetastatic transitional cell carcinoma of kidney.
77-7566	F	1	23	Focal severe, suppurative transmural inflammation and necrosis of the uterus. Focal severe coagulation necrosis of the placenta.
77-7629	F	10	22	Malignant glial cell tumor of the brain.
77-7633	F	10	18	Lymphosarcoma in the abdominal cavity.
77-7634	F	10	24	Unknown, possibly secondary to a fibroadenoma of the mammary gland which was ulcerated.

1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

TEXT RABBIT TABLES - 36 TO 55

TABLE 36

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Body Weights

Week of Study	ppm DBCP			
	0	0.1	1.0	10
(kg., mean $\pm$ S.D.)				
Pre-exposure				
- 2	3.88 ± 0.29	3.91 ± 0.57	4.06 ± 0.44	3.88 ± 0.44
- 1	4.01 ± 0.32	3.92 ± 0.44	4.12 ± 0.42	3.94 ± 0.42
Exposure				
1	3.96 ± 0.34	3.75 ± 0.42	4.02 ± 0.38	3.89 ± 0.43
2	3.96 ± 0.31	3.71 ± 0.40	4.02 ± 0.39	3.82 ± 0.39
3	3.98 ± 0.31	3.74 ± 0.42	4.02 ± 0.43	3.83 ± 0.41
4	4.00 ± 0.28	3.75 ± 0.46	3.98 ± 0.46	3.83 ± 0.41
5	3.98 ± 0.27	3.77 ± 0.48	3.89 ± 0.54	3.82 ± 0.39
6	3.95 ± 0.26	3.77 ± 0.47	3.96 ± 0.50	3.81 ± 0.44
7	3.94 ± 0.35	3.81 ± 0.49	3.90 ± 0.49	3.86 ± 0.54
8 ^a	4.03 ± 0.21	3.81 ± 0.50	3.86 ± 0.50	3.81 ± 0.47
9	3.95 ± 0.20	3.81 ± 0.46	3.93 ± 0.42	3.61 ± 0.30
10	4.00 ± 0.25	3.86 ± 0.48	3.98 ± 0.50	3.64 ± 0.26
11	3.96 ± 0.31	3.85 ± 0.46	3.91 ± 0.52	3.84 ± 0.51
12	3.99 ± 0.31	3.95 ± 0.39	3.62 ± 0.58	3.86 ± 0.52
13	3.93 ± 0.33	3.89 ± 0.41	3.87 ± 0.59	3.91 ± 0.53
14	3.88 ± 0.38	3.93 ± 0.39	4.00 ± 0.48	3.94 ± 0.51
Post-Exposure				
15	3.94 ± 0.25	3.94 ± 0.42	4.13 ± 0.56	3.92 ± 0.50

TABLE 36 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Body Weights

Week of Study	ppm DBCP			
	0	0.1 (kg., mean ± S.D.)	1.0	10
16	3.88 ±0.29	3.93 ±0.47	4.14 ±0.54	3.87 ±0.39
17	3.91 ±0.27	4.00 ±0.43	4.14 ±0.52	3.90 ±0.43
18	3.89 ±0.30	4.02 ±0.55	4.21 ±0.49	3.97 ±0.50
19	3.88 ±0.28	4.15 ±0.45	4.05 ±0.47	3.97 ±0.50
20	3.94 ±0.28	4.19 ±0.43	4.26 ±0.47	4.02 ±0.45
21	3.92 ±0.31	4.20 ±0.42	4.27 ±0.46	3.97 ±0.38
22	3.89 ±0.27	4.21 ±0.41	4.16 ±0.65	3.99 ±0.46
23	3.91 ±0.24	4.27 ±0.45	4.28 ±0.45	3.93 ±0.39
24	3.93 ±0.19	4.24 ±0.45	4.32 ±0.45	3.92 ±0.40
25	3.97 ±0.22	4.30 ±0.39	4.36 ±0.42	3.95 ±0.42
26	4.05 ±0.23	4.30 ±0.42	4.32 ±0.46	3.95 ±0.43
27	4.00 ±0.20	4.28 ±0.37	4.32 ±0.47	3.96 ±0.43
28	4.08 ±0.21	4.31 ±0.40	4.32 ±0.52	4.02 ±0.43
29	4.09 ±0.24	4.34 ±0.41	4.27 ±0.63	4.04 ±0.49
31	4.13 ±0.27	4.43 ±0.43	4.34 ±0.62	4.09 ±0.49
32	4.05 ±0.27	4.37 ±0.41	4.27 ±0.62	4.08 ±0.48
33	4.07 ±0.25	4.37 ±0.45	4.27 ±0.62	4.10 ±0.50
34	4.09 ±0.27	4.27 ±0.41	4.14 ±0.78	4.07 ±0.55
35	4.10 ±0.25	4.32 ±0.42	4.10 ±0.79	4.11 ±0.52

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TABLE 36 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Body Weights

Week of Study	ppm DBCP			
	0	0.1	1.0	10
		(kg., mean $\pm$ S.D.)		
36	4.09 ± 0.28	4.33 ± 0.42	4.15 ± 0.78	4.11 ± 0.50
37	4.11 ± 0.25	4.29 ± 0.40	4.17 ± 0.78	4.08 ± 0.54
38	4.10 ± 0.26	4.32 ± 0.43	4.15 ± 0.76	4.13 ± 0.56
39	4.16 ± 0.27	4.39 ± 0.45	4.17 ± 0.78	4.17 ± 0.57
40	4.07 ± 0.33	4.37 ± 0.39	4.10 ± 0.77	4.18 ± 0.58
41	4.08 ± 0.36	4.37 ± 0.40	4.04 ± 0.88	4.18 ± 0.59
42	4.14 ± 0.35	4.41 ± 0.42	3.98 ± 0.97	4.14 ± 0.62
43	4.09 ± 0.39	4.40 ± 0.42	3.91 ± 1.05	4.17 ± 0.61
44	4.12 ± 0.41	4.45 ± 0.46	3.95 ± 1.07	4.23 ± 0.62
45	4.08 ± 0.42	4.36 ± 0.44	3.84 ± 1.01	4.20 ± 0.58
46 ^b	4.01 ± 0.48	4.32 ± 0.43	3.79 ± 1.06	4.11 ± 0.59

[†]Male rabbits were exposed to 0, 0.1 or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males, the post-exposure period begins on week 9.

^bValues for the 46th week represent fasted body weights taken prior to necropsy.

No value differed significantly from the control value, by Dunnett's test, $p < 0.05$.

See Table A-28 for individual animal data.

TABLE 37

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Sperm Count

Week of Study	ppm DBCP			
	0	0.1	1.0	10
(millions of sperm/ml of semen, mean ± S.D.)				
Pre-Exposure				
-2	835 ± 237	576 ± 263	630 ± 549	579 ± 468
-1	694 ± 452	673 ± 416	552 ± 312	546 ± 198
Exposure				
1	728 ± 280	494 ± 281	538 ± 276	503 ± 255
2	671 ± 342	521 ± 135	373 ± 244*	347 ± 141
3	657 ± 181	835 ± 488	465 ± 231	392 ± 281*
4	575 ± 275	618 ± 290	467 ± 126	548 ± 456
5	474 ± 205	391 ± 160	353 ± 186	467 ± 272
6	675 ± 294	576 ± 440	473 ± 165	455 ± 250
7	641 ± 501	531 ± 571	386 ± 251	277 ± 170*
8 ^a	426 ± 167	423 ± 232	301 ± 167	124 ± 254*
9	509 ± 255	420 ± 122	510 ± 122	124 ± 275*
10	473 ± 206	459 ± 284	376 ± 288	7.2 ± 7.0*
11	458 ± 132	360 ± 201	204 ± 131*	5.4 ± 2.0*
12	716 ± 234	382 ± 208*	356 ± 210*	2.4 ± 3.4*
13	758 ± 502	738 ± 376	248 ± 217*	3.7 ± 7.2*
14	602 ± 282	498 ± 499	109 ± 160*	1.9 ± 2.7*
Post-Exposure				
16	604 ± 273	448 ± 157	292 ± 210	0.9 ± 0.8*
19	396 ± 220	500 ± 190	199 ± 221	0.3 ± 0.2*
24	540 ± 560	691 ± 121	532 ± 411	0.4 ± 0.5*
26	452 ± 133	629 ± 115	328 ± 180	1.8 ± 3.5*
27	701 ± 501	415 ± 259	359 ± 189	7.7 ± 10.9*
28	327 ± 213	409 ± 308	542 ± 261	5.1 ± 9.6*
30	728 ± 678	526 ± 244	411 ± 327	4.9 ± 5.9*
32	357 ± 202	628 ± 24*	394 ± 299	6.0 ± 7.0*
34	520 ± 467	535 ± 235	544 ± 301	7.5 ± 11.9*
36	374 ± 197	486 ± 239	471 ± 155	1.7 ± 2.1*
38	667 ± 689	497 ± 196	382 ± 442	39.6 ± 73.0*
40	637 ± 433	616 ± 341	488 ± 544	28.7 ± 44.1 ^b
42	429 ± 284	231 ± 181	559 ± 587	2.0 ± 2.5*
44	497 ± 239	522 ± 196	395 ± 313	8.4 ± 8.6*
46	637 ± 350	583 ± 276	430 ± 107	27.2 ± 37.2*

†Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males, the post-exposure period begins on week 9.

^bSignificantly different from control at $p < 0.10$ using Wilcoxon test. Small sample size makes statistical interpretation inconclusive.

*Significantly different from the control value by Wilcoxon test, $p < 0.05$.

See Table A-29 for individual animal data.

TABLE 38

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Week of Study	Rabbit: Volume of Ejaculate			
	ppm DBCP			
	0	0.1	1.0	10
	(ml of semen, mean ± S.D.)			
Pre-Exposure				
-2	0.6 ± 0.2	0.7 ± 0.4	0.6 ± 0.2	0.6 ± 0.3
-1	0.4 ± 0.2	0.5 ± 0.2	0.4 ± 0.2	0.4 ± 0.2
Exposure				
1	0.7 ± 0.4	1.0 ± 0.5	0.5 ± 0.2	0.8 ± 0.5
2	0.8 ± 0.4	1.0 ± 0.5	0.8 ± 0.5	0.6 ± 0.3
3	0.8 ± 0.5	0.9 ± 0.6	1.0 ± 0.4	0.9 ± 0.4
4	0.7 ± 0.3	1.1 ± 0.6	0.8 ± 0.3	0.9 ± 0.4
5	0.7 ± 0.4	0.8 ± 0.4	0.9 ± 0.3	0.8 ± 0.3
6	1.1 ± 0.3	1.1 ± 0.7	1.1 ± 0.5	0.7 ± 0.4
7	0.9 ± 0.4	1.0 ± 0.6	1.0 ± 0.4	0.8 ± 0.3
8 ^a	0.8 ± 0.4	1.0 ± 0.5	0.9 ± 0.3	0.8 ± 0.5
9	1.0 ± 0.4	1.4 ± 0.2*	0.8 ± 0.4	0.6 ± 0.1*
10	1.3 ± 0.4	1.1 ± 0.4	0.8 ± 0.4*	0.8 ± 0.4*
11	1.0 ± 0.4	1.1 ± 0.5	0.8 ± 0.4	0.6 ± 0.4
12	1.1 ± 0.6	1.2 ± 0.5	0.8 ± 0.4	1.6 ± 1.3
13	0.8 ± 0.3	1.0 ± 0.7	0.9 ± 0.4	1.2 ± 0.3
14	0.7 ± 0.2	1.1 ± 0.6	0.8 ± 0.2	0.7 ± 0.2
Post-Exposure				
16	0.9 ± 0.2	1.2 ± 0.7	0.8 ± 0.4	1.4 ± 0.7
19	1.1 ± 0.6	1.2 ± 0.5	1.1 ± 0.8	1.2 ± 0.6
24	1.0 ± 0.2	1.1 ± 0.7	1.0 ± 0.6	1.0 ± 0.5
26	0.9 ± 0.2	1.2 ± 0.2	0.8 ± 0.4	0.7 ± 0.5
27	0.7 ± 0.3	1.3 ± 0.2	0.8 ± 0.5	0.8 ± 0.5
28	0.7 ± 0.3	1.0 ± 0.6	0.7 ± 0.2	0.5 ± 0.4
30	0.7 ± 0.2	0.9 ± 0.4	0.6 ± 0.2	0.7 ± 0.4
32	0.6 ± 0.2	1.0 ± 0.4	0.8 ± 0.4	0.9 ± 0.5
34	0.7 ± 0.3	0.7 ± 0.2	0.9 ± 0.4	0.7 ± 0.2
36	0.7 ± 0.2	1.0 ± 0.4	0.8 ± 0.4	1.0 ± 0.6
38	1.2 ± 0.6	0.9 ± 0.3	0.9 ± 0.4	1.0 ± 0.7
40	0.6 ± 0.2	1.2 ± 0.2*	0.8 ± 0.4	0.9 ± 0.5
42	0.7 ± 0.3	1.0 ± 0.4	0.8 ± 0.3	0.8 ± 0.2
44	0.9 ± 0.2	0.9 ± 0.3	1.0 ± 0.1	1.1 ± 0.6
46	0.7 ± 0.2	1.2 ± 0.4	0.8 ± 0.3	1.2 ± 0.4*

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males, the post-exposure period begins on week 9.

*Significantly different from the control value by Dunnett's test, p < 0.05

See Table A-30 for individual animal data.

TABLE 39

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Progressively Motile Sperm

Week of Study	ppm DBCP			
	0	0.1	1.0	10
(% Progressively Motile Sperm, mean $\pm$ S.D.)				
Pre-Exposure				
-2	68 $\pm$ 26	60 $\pm$ 33	52 $\pm$ 36	74 $\pm$ 8
-1	80 $\pm$ 5	78 $\pm$ 6	77 $\pm$ 6	55 $\pm$ 38*
Exposure				
1	63 $\pm$ 29	60 $\pm$ 28	62 $\pm$ 30	54 $\pm$ 35
2	69 $\pm$ 21	57 $\pm$ 34	52 $\pm$ 34	80 $\pm$ 9
3	53 $\pm$ 24	42 $\pm$ 20	53 $\pm$ 27	64 $\pm$ 27
4	71 $\pm$ 13	51 $\pm$ 28	50 $\pm$ 30	55 $\pm$ 27
5	61 $\pm$ 15	56 $\pm$ 16	56 $\pm$ 19	70 $\pm$ 13
6	47 $\pm$ 29	48 $\pm$ 35	58 $\pm$ 24	44 $\pm$ 25
7	64 $\pm$ 20	58 $\pm$ 23	62 $\pm$ 19	37 $\pm$ 28
8 ^a	49 $\pm$ 25	54 $\pm$ 28	46 $\pm$ 31	23 $\pm$ 21
9	37 $\pm$ 14	47 $\pm$ 33	39 $\pm$ 20	27 $\pm$ 34
10	42 $\pm$ 27	48 $\pm$ 36	24 $\pm$ 22	15 $\pm$ 13*
11	62 $\pm$ 20	44 $\pm$ 31	37 $\pm$ 27	3 $\pm$ 4*
12	56 $\pm$ 24	40 $\pm$ 28	46 $\pm$ 30	— ^b
13	50 $\pm$ 31	34 $\pm$ 24	35 $\pm$ 21	0 ^c
14	45 $\pm$ 24	38 $\pm$ 31	36 $\pm$ 10	0 ^c
Post-Exposure				
16	35 $\pm$ 36	19 $\pm$ 34	50 $\pm$ 34	— ^b
19	17 $\pm$ 21	52 $\pm$ 23*	56 $\pm$ 26*	— ^b
24	63 $\pm$ 16	37 $\pm$ 38	41 $\pm$ 35	— ^b
26	58 $\pm$ 33	20 $\pm$ 14	45 $\pm$ 34	38 ^c
27	21 $\pm$ 27	20 $\pm$ 22	30 $\pm$ 16	3 ^c
28	67 $\pm$ 35	15 $\pm$ 21*	40 $\pm$ 45	7 ^c
30	30 $\pm$ 31	14 $\pm$ 20	29 $\pm$ 29	21 $\pm$ 21
32	45 $\pm$ 37	19 $\pm$ 26	20 $\pm$ 30	0 ^c
34	46 $\pm$ 31	44 $\pm$ 37	26 $\pm$ 38	7 $\pm$ 6
36	54 $\pm$ 25	32 $\pm$ 23	36 $\pm$ 28	18 $\pm$ 21*
38	49 $\pm$ 25	37 $\pm$ 36	18 $\pm$ 24	15 $\pm$ 23
40	72 $\pm$ 22	63 $\pm$ 38	38 $\pm$ 44	26 $\pm$ 20*
42	57 $\pm$ 32	53 $\pm$ 35	43 $\pm$ 32	20 $\pm$ 22
44	50 $\pm$ 38	56 $\pm$ 26	57 $\pm$ 32	20 $\pm$ 14
46	56 $\pm$ 8	39 $\pm$ 31	18 $\pm$ 16*	11 $\pm$ 16*

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, they were maintained in the laboratory for recovery.

^aExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males the post-exposure period begins on week 9.

^bInsufficient number of sperm for determination.

^cNo mean calculated only a single value was available.

*Significantly different from the control value by Dunnett's test $p < 0.05$.

See Table A-31 for individual animal data.

TABLE 40

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Non-Progressively Motile Sperm

Week of Study	ppm DBCP			
	0	0.1	1.0	10
(% Non-Progressively Motile Sperm, mean ± S.D.)				
Pre-Exposure				
-2	8 ± 5	6 ± 4	7 ± 5	13 ± 6*
-1	11 ± 4	11 ± 3	10 ± 2	10 ± 8
Exposure				
1	19 ± 15	17 ± 13	20 ± 22	26 ± 32
2	23 ± 22	32 ± 32	34 ± 22	15 ± 8
3	31 ± 20	37 ± 23	22 ± 21	21 ± 23
4	18 ± 13	32 ± 26	37 ± 35	23 ± 19
5	21 ± 18	29 ± 18	26 ± 17	14 ± 10
6	40 ± 28	33 ± 29	23 ± 24	35 ± 21
7	21 ± 13	27 ± 26	23 ± 12	33 ± 16
8 ^a	36 ± 22	30 ± 22	32 ± 25	40 ± 24
9	49 ± 20	31 ± 24	38 ± 22	42 ± 33
10	32 ± 18	25 ± 16	40 ± 23	25 ± 19
11	31 ± 21	38 ± 28	36 ± 27	18 ± 8
12	18 ± 13	39 ± 28	26 ± 18	— ^b
13	38 ± 27	38 ± 25	34 ± 22	1 ^c
14	30 ± 14	46 ± 29	37 ± 16	0 ^c
Post-Exposure				
16	43 ± 36	57 ± 33	37 ± 38	— ^b
19	65 ± 31	37 ± 30	29 ± 20	— ^b
24	31 ± 19	49 ± 32	45 ± 32	— ^b
26	32 ± 22	64 ± 5*	24 ± 12	17 ^c
27	56 ± 28	39 ± 27	48 ± 14	5 ^c
28	16 ± 14	47 ± 31	52 ± 42	58 ^c
30	48 ± 25	48 ± 36	27 ± 22	22 ± 11
32	18 ± 12	45 ± 36	29 ± 30	6 ^c
34	34 ± 20	31 ± 30	65 ± 39	28 ± 17
36	34 ± 18	50 ± 23	53 ± 22	18 ± 24
38	34 ± 23	29 ± 27	41 ± 36	49 ± 17
40	21 ± 23	20 ± 24	61 ± 43*	15 ± 17
42	38 ± 31	26 ± 15	45 ± 31	31 ± 15
44	44 ± 35	31 ± 20	33 ± 38	29 ± 10
46	33 ± 13	47 ± 24	47 ± 7	37 ± 9

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males the post-exposure period begins on week 9.

^bInsufficient number of sperm for determination.

^cNo mean calculated only a single value was available.

*Significantly different from the control value by Dunnett's test, p < 0.05.

See Table A-32 for individual animal data.

TABLE 41

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Non-Motile Sperm

Week of Study	ppm DBCP			
	0	0.1	1.0	10
(% Non-Motile Sperm, mean ± S.D.)				
Pre-Exposure				
-2	24 ± 28	33 ± 36	40 ± 42	12 ± 6
-1	9 ± 4	11 ± 6	13 ± 8	34 ± 45*
Exposure				
1	18 ± 24	23 ± 26	17 ± 22	19 ± 31
2	8 ± 4	11 ± 5	14 ± 19	6 ± 2
3	15 ± 19	21 ± 29	25 ± 30	14 ± 14
4	11 ± 6	18 ± 8	15 ± 11	21 ± 16
5	17 ± 9	15 ± 5	18 ± 16	15 ± 8
6	13 ± 9	20 ± 10	19 ± 9	21 ± 14
7	15 ± 17	15 ± 9	15 ± 13	29 ± 16
8 ^a	16 ± 16	16 ± 9	22 ± 31	37 ± 30
9	13 ± 9	22 ± 18	23 ± 33	31 ± 34
10	27 ± 20	27 ± 29	36 ± 31	60 ± 31*
11	7 ± 3	19 ± 24	27 ± 23	79 ± 13*
12	26 ± 12	21 ± 30	28 ± 19	— ^b
13	11 ± 9	26 ± 30	31 ± 17*	99 ^c
14	26 ± 21	16 ± 13	26 ± 11	100 ^c
Post-Exposure				
16	22 ± 34	24 ± 28	12 ± 4	— ^b
19	24 ± 27	12 ± 13	15 ± 9	— ^b
24	6 ± 5	14 ± 22	14 ± 10	— ^b
26	11 ± 20	15 ± 18	31 ± 31	45 ^c
27	24 ± 28	40 ± 35	22 ± 13	92 ^c
28	18 ± 24	38 ± 41	7 ± 7	35 ^c
30	22 ± 15	38 ± 33	44 ± 37	57 ± 24
32	36 ± 29	36 ± 38	51 ± 36	94 ^c
34	21 ± 11	24 ± 34	9 ± 2	66 ± 22*
36	13 ± 12	19 ± 32	11 ± 15	64 ± 43*
38	16 ± 14	34 ± 45	41 ± 36	36 ± 20
40	7 ± 7	18 ± 18	2 ± 2	59 ± 25*
42	8 ± 5	20 ± 28	12 ± 8	49 ± 32*
44	6 ± 3	14 ± 11	10 ± 12	51 ± 21*
46	10 ± 9	14 ± 17	34 ± 21*	52 ± 18*

†Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males, the post-exposure period begins on week 9.

^bInsufficient number of sperm for determination.

^cNo mean calculated: only a single value was available.

*Significantly different from the control value by Dunnett's test, $p < 0.05$.

See Table A-33 for individual animal data.

TABLE 42

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Viability of Sperm^a

Week of Study	ppm DBCP			
	0	0.1	1.0	10
(% live sperm, mean ± S.D.)				
Pre-Exposure				
-2	87 ± 9	88 ± 28	92 ± 6	87 ± 6
-1	93 ± 3	88 ± 8	89 ± 6	89 ± 5
Exposure				
1	88 ± 15	71 ± 25	81 ± 25	89 ± 6
2	92 ± 5	87 ± 9	84 ± 18	90 ± 6
3	76 ± 21	84 ± 12	79 ± 15	86 ± 10
4	88 ± 6	80 ± 14	83 ± 5	76 ± 20*
5	78 ± 12	81 ± 5	80 ± 15	78 ± 8
6	89 ± 5	86 ± 6	80 ± 13*	82 ± 8
7	88 ± 5	87 ± 10	86 ± 10	81 ± 11
8 ^b	88 ± 5	85 ± 8	73 ± 25	49 ± 26*
9	87 ± 11	88 ± 12	83 ± 9	53 ± 36*
10	83 ± 16	90 ± 6	82 ± 11	49 ± 17*
11	88 ± 5	84 ± 18	79 ± 13	31 ± 14*
12	84 ± 10	89 ± 6	69 ± 22*	— ^c
13	86 ± 14	78 ± 18	72 ± 12*	— ^d
14	83 ± 13	87 ± 6	74 ± 17	— ^c
Post-Exposure				
16	90 ± 5	93 ± 4	84 ± 8	— ^d
19	85 ± 22	92 ± 3	92 ± 8	— ^c
24	79 ± 8	86 ± 7	87 ± 16	— ^c
26	96 ± 4	96 ± 2	92 ± 5	36 ^d
27	88 ± 12	86 ± 24	95 ± 4	51 ^d
28	96 ± 2	76 ± 29	89 ± 11	47 ^d
30	86 ± 15	82 ± 15	82 ± 17	46 ± 65*
32	82 ± 15	89 ± 6	86 ± 13	34 ^d
34	82 ± 11	79 ± 23	62 ± 31	47 ± 17*
36	85 ± 11	81 ± 22	89 ± 8	47 ± 23*
38	86 ± 12	53 ± 20*	77 ± 30	53 ± 10*
40	84 ± 14	89 ± 6	84 ± 4	59 ± 17*
42	67 ± 22	82 ± 7	81 ± 3	66 ± 8
44	81 ± 16	91 ± 4	92 ± 3	72 ± 1
46	90 ± 6	78 ± 5	68 ± 36	70 ± 13

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aDetermined by staining sperm with eosin-aniline blue stain.

^bExposures of rabbits to 10 ppm were terminated after 8 weeks due to toxicity of the test material. For the 10 ppm males, the post-exposure period begins on week 9.

^cInsufficient number of sperm for determination of the percentage of live sperm.

^dNo mean calculated; only a single value was available.

*Significantly different from the control value by Dunnett's test, p < 0.05.

See Table A-34 for individual animal data.

TABLE 43

DBCP: INHALATION FERTILITY STUDY IN THE RABBIT[†]

Observations Made at the Time of Necropsy of
Unexposed Female Rabbits Mated with
DBCP Exposed Males (14 Weeks)

	ppm DBCP			
	0	0.1	1.0	10
No. of males	9	10	9	5
% (No. of males which copulated)	100(9)	90(9)	78(7)	100(5)
Male Fertility Index, % (No. Fertile Males/No. Bred to Females)	67(6/9)	100(9/9)	86(6/7)	0(0/5)*
Corpora Lutea/dam ^a	10 ± 1	10 ± 3	8 ± 4	—
Implantation/litter ^a	9 ± 1	9 ± 1	6 ± 2*	—
Resorptions/litter ^a	0.7 ± 0.8	0.9 ± 0.8	0.3 ± 0.5	—
% Pre-Implantation Loss ^{a,b}	9 ± 15	14 ± 13	21 ± 20	—
% Post-Implantation Loss ^{a,c}	8 ± 9	10 ± 9	4 ± 6	—

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. During the 14th week of the study, each male rabbit was allowed to mate with one unexposed female rabbit. The females were sacrificed on day 28 of gestation.

^aMean ± standard deviation.

^bPre-Implantation Loss = $\frac{\% \text{ corpora lutea minus } \% \text{ implantations}}{\% \text{ corpora lutea}} \times 100$

^cPost-Implantation Loss = $\frac{\% \text{ resorptions}}{\% \text{ implantations}} \times 100$

— No data available.

*Significantly different from the control value by the appropriate statistical test, p < 0.05.

See Table A-35 for individual animal data.

TABLE 44

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Observations Made at the Time of Necropsy of
Unexposed Female Rabbits Mated with
DBCP-Exposed Males (41 Weeks)

	ppm DBCP			
	0	0.1	1.0	10
No. of males	6	6	5	5
% (No. of males which copulated)	83(5)	100(6)	80(4)	100(5)
Male Fertility Index, % (No. males impregnating one female/number bred)	100(5/5)	100(6/6)	100(4/4)	40(2/5)
%, (No. males impregnating two females/number bred)	80(4/5)	100(6/6)	100(4/4)	20(1/5)
Corpora Lutea/Dam ^a	10 ± 1	10 ± 2	10 ± 1	12 ± 3
Implantations/Litter ^a	8 ± 2 ^b	8 ± 2	8 ± 2	10 ± 6
Resorptions/Litter ^a	0.7 ± 0.7	0.8 ± 0.5	0.2 ± 0.3	1.0 ± 1.4
% Pre-Implantation Loss ^{a,c}	24 ± 20	22 ± 17	19 ± 13	22 ± 26
% Post-Implantation Loss ^{a,d}	16 ± 24	15 ± 12	3 ± 3	7 ± 10

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. During the 41st week of the study, each male was allowed to mate with two unexposed female rabbits. The females were sacrificed on day 29 of gestation.

^aMean ± standard deviation.

^bOne fetus from a female bred to a control male exhibited multiple external malformations including short trunk, acaudia, rotated hind limbs, ectodactyly, and microdactyly.

^cPre-Implantation Loss = $\frac{\% \text{ corpora lutea minus } \% \text{ implantations}}{\% \text{ corpora lutea}} \times 100$

^dPost-Implantation Loss = $\frac{\% \text{ resorptions}}{\% \text{ implantations}} \times 100$

No value differed significantly from the control value by the appropriate statistical test.

See Table A-36 for individual animal data.

TABLE 45

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]Rabbit: Hematologic Evaluation

Week of Study	ppm DBCP	n	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count (5)				
							Neut	Lymph	Mono	Eosin	Baso
-2	0	4	46 ± 2 ^a	6.8 ± 0.8	14.7 ± 0.8	9.4 ± 2.0	30	61	5	1	3
	0.1	4	43 ± 1	6.4 ± 0.5	14.0 ± 0.4	9.9 ± 2.5	40	56	2	1	2
	1.0	4	42 ± 2	6.2 ± 0.6	13.9 ± 0.8	8.4 ± 0.8	24	69	4	1	2
	10.0	4	44 ± 1	6.5 ± 0.2	14.4 ± 0.6	9.5 ± 1.9	26	66	4	2	2
8	10.0	1	40	6.2	12.4	12.2	66	25	6	1	2
9	0	3	44 ± 3	6.6 ± 0.6	14.2 ± 0.4	10.8 ± 1.0	41	52	3	1	3
	0.1	4	38 ± 5	5.6 ± 0.8	12.1 ± 0.9	15.8 ± 7.2	51	40	4	2	3
	1.0	4	37 ± 5	5.6 ± 0.4	11.9 ± 1.7	12.2 ± 2.7	55	34	6	0	5
	10.0	1	43	5.8	14.4	7.7	43	50	3	0	4
13	0	3	38 ± 2	5.9 ± 0.5	12.9 ± 1.2	11.9 ± 1.6	49	43	5	1	3
	0.1	4	40 ± 10	5.8 ± 1.6	12.7 ± 3.0	12.9 ± 5.8	59	36	2	1	2
	1.0	4	37 ± 6	5.8 ± 0.3	12.1 ± 2.2	10.7 ± 2.0	51	41	3	1	4
	10.0	1	44	6.1	14.6	6.6	35	53	1	2	9

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 day/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

No value differed significantly from the control value by Dunnett's test, p<0.05.

See Tables A-37 through A-41 for individual animal data.

TABLE 46

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Clinical Chemistry Values
Week of Study: 14

	ppm DBCP			
	0	0.1	1	10
No. of rabbits ^a	3	4	4	0
Prothrombin time, sec.	8.3 ± 0.5 ^b	8.1 ± 0.5	8.1 ± 0.2	--
BUN, mg/100 ml	19 ± 2	27 ± 22	18 ± 3	--
SGPT, mU/ml	20 ± 7	18 ± 5	21 ± 6	--
SGOT, mU/ml	48 ± 21	25 ± 7	40 ± 16	--
AP, mU/ml	27 ± 17	15 ± 6	29 ± 2	--

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aA sample was not obtained from one rabbit in the 0.1 and 1 ppm groups each.

^bMean ± S.D.

-- No data available.

No value differed significantly from the control value by Dunnett's test, $p < 0.05$.

See Table A-42 for individual animal data.

TABLE 47

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: FSH and Testosterone Levels

<u>Week of Study</u>	<u>ppm DBCP</u>	<u>n</u>	<u>FSH (nanogram/ml)</u>	<u>Testosterone (nanogram/ml)</u>
14	0	3	6.9±2.7 ^a	1.2±1.1
	0.1	4	5.6±3.4	1.4±1.6
	1.0	4	15.1±4.6*	3.4±2.7
46	0	6	3.5±1.7	1.4±0.9
	0.1	6	4.5±3.8	3.4±2.7
	1.0	5	3.7±3.7	0.8±0.6
	10.0	5	12.9±2.0*	1.0±1.0

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aMean ± S.D.

*Significantly different from the control value by Dunnett's test, p<0.05.

See Table A-43 for individual animal data.

TABLE 48

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Organ Weights and Organ/Body Weight Ratios Determined at the
Interim (8 and 14 weeks) and Terminal (46 weeks) Sacrifices

Week of Study	ppm DBCP	n	Body Wt. kg	Brain		Heart		Liver	
				g	g/100g	g	g/100g	g	g/100g
8	10.0	1	4.45	10.95	0.25	8.58	0.19	162.61	3.65
14	0	3	3.82±0.62 ^a	9.83±1.08	0.26±0.04	8.12±0.50	0.22±0.03	99.73±25.60	2.61±0.48
14	0.1	4	3.94±0.50	9.84±0.67	0.25±0.04	7.23±2.31	0.18±0.05	94.82±33.28	2.36±0.56
14	1.0	4	3.60±0.66	9.91±0.54	0.28±0.04	7.63±0.36	0.22±0.04	96.29±17.99	2.70±0.43
46	0	6	4.00±0.48	9.97±0.29	0.25±0.03	7.56±0.62	0.19±0.03	73.65±9.94	1.86±0.33
46	0.1	6	4.32±0.43	10.45±0.76	0.24±0.02	7.24±0.83	0.17±0.02	74.71±8.12	1.75±0.30
46	1.0	5	3.79±1.06	9.50±0.50	0.27±0.07	7.56±1.29	0.22±0.08	67.75±11.67	1.85±0.35
46	10.0	5	4.11±0.59	10.23±0.52	0.25±0.03	7.05±1.01	0.17±0.01	70.07±10.15	1.71±0.08

TABLE 48 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Organ Weights and Organ/Body Weight Ratios Determined at the Interim (8 and 14 weeks) and Terminal (46 weeks) Sacrifices

Week of Study	ppm DBCP	n	Kidney		Testes		Epididymides		Adrenals	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g
8	10.0	1	18.63	0.42	1.53	0.03	2.42	0.05	— ^b	— ^b
14	0	3	14.91±0.80	0.40±0.05	6.78±0.95	0.20±0.05	2.65±0.07	0.08±0.01	— ^b	— ^b
14	0.1	4	17.09±3.25	0.43±0.05	6.01±1.31	0.15±0.03	3.24±0.56	0.08±0.01	— ^b	— ^b
14	1.0	4	17.57±3.12	0.49±0.08	3.33±0.47*	0.10±0.03*	2.50±0.54	0.07±0.02	— ^b	— ^b
46	0	6	17.10±2.25	0.44±0.11	6.06±0.54	0.15±0.01	2.28±0.29	0.06±0.01	0.60±0.16	0.02±0.01
46	0.1	6	17.02±2.08	0.39±0.04	6.49±0.43	0.15±0.01	2.33±0.27	0.05±0.00	0.70±0.18	0.02±0.00
46	1.0	5	17.28±1.45	0.49±0.14	4.91±1.17*	0.14±0.04	2.45±0.69	0.07±0.01	0.71±0.07	0.02±0.00
46	10.0	5	18.21±0.72	0.45±0.07	1.80±0.38*	0.05±0.01*	1.67±0.13	0.04±0.01	0.63±0.15	0.02±0.00

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, they were maintained in the laboratory for recovery.

^aMean ± S.D.

^bAdrenals for the 8 and 14 week interim sacrifice were not weighed.

Significantly different from the control value by Dunnett's test, p<0.05.

TABLE 49

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY
STUDY OF DBCP IN RATS AND RABBITS

TISSUES ROUTINELY COLLECTED AT NECROPSY AND
PRESERVED IN 10% FORMALIN

esophagus	uterus	anterior mediastinal
salivary gland	mammary gland	blood vessels
stomach	brain (cerebellum,	(aorta)
small intestine	cerebrum, brain	skeletal muscle
large intestine	stem)	adrenal glands
(cecum and colon)	spinal cord and	thyroid gland
pancreas	vertebral column	parathyroid glands
liver	pituitary gland	mesenteric adipose
gallbladder	peripheral nerve	tissue
(rabbits)	(sciatic)	skin
kidneys	trachea	eyes
urinary bladder	larynx	lower jaw, including
prostate	lungs (bronchi)	tongue
seminal vesicle	spleen	any gross lesion of
coagulating gland	thymus	mass
testes	lymph nodes	
epididymis	(thoracic,	
ovaries	mesenteric)	
oviducts	heart	

TABLE 50

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>ADRENAL GLANDS</u>								
A-6	Slightly raised pale focus(1) on adrenal	0	0	-	-	0	1	1
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
A-7	Raised dark focus(1) on adrenal	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
<u>CARDIOVASCULAR SYSTEM</u>								
B-4	Serosanguineous fluid within the pericardial sac	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
B-5	Fibrinous or fibrous pericarditis (adhesions to epicardium)	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
B-6	Heart involved in a suppurative inflammatory response with abscess formation	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
<u>EYES</u>								
D-7	Focal scar on eyelid	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
D-8	Purulent or mucoid exudate adhering to conjunctiva	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
<u>GENERAL</u>								
E-1	No visible lesions	0	0	-	-	0	1	1
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
E-3	Postmortem autolysis	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
E-5	Ascites - cloudy, dark or hemorrhagic	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
agnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>GENERAL (cont'd)</u>								
.7	Exudate or porphyrin-like pigment accumulation lateral to external nares or around eyes	0	0	-	-	1	0	1
		0.1	-	-	-	4	0	4
		1.0	-	-	1	3	0	4
		10.0	1	0	0	-	0	1
.9	Perineal soiling	0	0	-	-	1	1	2
		0.1	-	-	-	2	0	2
		1.0	-	-	0	1	3	4
		10.0	0	0	0	-	1	1
-10	Depletion of adipose tissue, including serous atrophy of fat	0	0	-	-	0	1	1
		0.1	-	-	-	1	0	1
		1.0	-	-	1	1	2	4
		10.0	0	0	0	-	0	0
-11	Loss of body condition and/or roughened and dirty hair	0	0	-	-	1	1	2
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	2	3
		10.0	0	0	0	-	0	0
-13	Exudate within external ear canals	0	1	-	-	0	5	6
		0.1	-	-	-	0	4	4
		1.0	-	-	0	3	2	5
		10.0	0	0	0	-	3	3
-14	Abscess at base of incisor or molar tooth	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-15	Decubitus ulceration and scab formation of feet	0	0	-	-	0	1	1
		0.1	-	-	-	1	0	1
		1.0	-	-	0	1	2	3
		10.0	0	1	0	-	0	1
-16	Second set of incisors posterior to the normal set	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
-17	Tapeworm cysts scattered throughout peritoneum and omentum	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-18	Yellowish, purulent inflammatory material occluding ear canal	0	1	-	-	0	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>GASTROINTESTINAL SYSTEM</u>								
F-6	Absence or decreased normal ingesta in gastrointestinal tract	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	1	0	0	-	0	1
F-8	Small intestinal mass(es) or nodule(s)	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
F-12	Mass(es) or nodule(s) in stomach	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
F-13	Dark area or focus on gastric mucosa, suggestive of hemolyzed blood admixed with bile	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
F-14	Pinpoint dark foci on stomach mucosa	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
<u>LIVER</u>								
G-3	Diffuse paleness of liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
G-4	Accentuated lobular pattern of liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
G-5	Few small pale foci or focus in liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
G-8	Darkened or congested liver	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	1	0	1	2
		10.0	0	1	0	-	-	1
G-9	Firm liver	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	1	0	1	2
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LIVER (cont'd)</u>								
-11	Adhesions and/or inflammation of liver capsule	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-12	White focus(1) in subcapsular region of liver, suggestive of parasitic lesion(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-13	White focus(1) on liver capsule, suggestive of fibrous connective tissue	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-14	Friable liver	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	1	0	-	0	1
-15	Finely nodular surface of liver	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-16	Atrophied liver (decreased size)	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
<u>LYMPHORETICULAR SYSTEM</u>								
-3	Enlarged axillary lymph node(s)	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
-8	Tan appearance of axillary lymph node(s)	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-9	Enlarged thoracic lymph node(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
-10	Edema of thoracic lymph node(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 32 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Number of rabbits per group	0	1	0	0	3	6	10
	0.1	0	0	0	4	6	10
	1.0	0	0	1	4	5	10
	10.0	3	1	1	0	5	10
<u>MUSCULOSKELETAL SYSTEM</u>							
I-2	Nodule on mandible consistent with an abscess	0	0	-	0	1	1
		0.1	-	-	0	0	0
		1.0	-	0	1	1	2
		10.0	0	0	-	0	0
I-3	Hock joint swollen and arthritic due to an inflammatory reaction	0	0	-	0	1	1
		0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
I-4	Generalized atrophy of muscle	0	0	-	0	1	1
		0.1	-	-	0	0	0
		1.0	-	0	0	1	1
		10.0	0	0	-	0	0
I-5	Edema of hind limb muscles	0	0	-	0	0	0
		0.1	-	-	1	0	1
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
<u>MALE REPRODUCTIVE SYSTEM</u>							
L-1	Decreased size of testicle(s) with or without mineral-like lesions	0	0	-	1	1	2
		0.1	-	-	1	0	1
		1.0	-	0	4	2	6
		10.0	1	1	-	5	8
L-2	Dark tan appearance of testes	0	0	-	0	0	0
		0.1	-	-	0	0	0
		1.0	-	0	3	1	4
		10.0	0	0	-	5	5
L-6	Edematous appearance of testes	0	0	-	0	1	1
		0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
L-9	Enlarged prostate	0	0	-	0	1	1
		0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
L-10	Edematous appearance of prostate	0	0	-	0	1	1
		0.1	-	-	0	0	0
		1.0	-	0	0	1	1
		10.0	0	0	-	1	1
L-11	Absence or severe atrophy of one testis	0	0	-	0	0	0
		0.1	-	-	0	0	0
		1.0	-	0	0	1	1
		10.0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM</u> (cont'd)								
-12	Flaccid testicle(s)	0	0	-	-	0	1	1
		0.1	-	-	-	1	0	1
		1.0	-	-	1	2	2	5
		10.0	0	0	0	-	5	5
-13	Decreased size of prostate	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	2	1	3
		10.0	0	0	1	-	3	4
-14	Prostate - flaccid	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	1	2
		10.0	0	0	0	-	4	4
-15	Dark appearance of prostate	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-16	Prostate - filled with a yellowish fluid	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-17	Decreased size of epididymis(ides)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	1	1	-	0	2
-18	Testicle - mottled in color with yellow to tan colored streaks	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
<u>RESPIRATORY SYSTEM</u>								
-1	Dark or red focus(1) in lungs	0	0	-	-	3	1	4
		0.1	-	-	-	2	4	6
		1.0	-	-	0	3	3	6
		10.0	0	0	0	-	4	4
-2	Few pale foci in lungs	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-5	Mottled appearance of lungs	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	2	2
		10.0	0	1	1	-	0	2

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
RESPIRATORY SYSTEM (cont'd)								
M-6	Mucopurulent or caseopurulent exudate in turbinates	0	0	-	-	3	1	4
		0.1	-	-	-	1	2	3
		1.0	-	-	1	4	3	8
		10.0	1	1	0	-	1	3
M-7	Erosion or necrosis of nasal turbinates	0	0	-	-	2	1	3
		0.1	-	-	-	0	2	2
		1.0	-	-	1	2	2	5
		10.0	0	0	0	-	1	1
M-8	Lung nodule(s) consistent with abscess(es)	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	1	1	-	0	2
M-9	Fibrinous or fibrous pleural adhesions	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
M-10	Pulmonary atelectasis	0	0	-	-	1	0	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	2	3
		10.0	1	0	1	-	0	2
M-11	Hyperemic and/or congested appearance of nasal turbinates	0	0	-	-	1	0	1
		0.1	-	-	-	3	0	3
		1.0	-	-	0	2	0	2
		10.0	1	0	1	-	0	2
M-12	Darkened, congested, consolidated, and/or edematous appearance of lungs due to pneumonia	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	1	0	0	-	0	1
M-14	Severe abscessation of thoracic cavity and lung	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	1	1
		10.0	0	0	1	-	0	1
M-15	Red and hemorrhagic appearance of trachea	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
M-16	Suppurative exudate in bronchi	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM</u>								
-7	Focal dark depressed foci or area(s) in kidney	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	2	3
		10.0	0	0	0	-	0	0
-8	Dilated renal pelvis(es) (hydronephrosis)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-9	Mottled appearance of kidney(s)	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	2	2
-10	Cyst(s) in kidney	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-11	Hyperemic appearance of blood vessels of urinary bladder	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-12	Polypoid mass in bladder	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
-13	Focal hemorrhagic areas on urinary bladder mucosa	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
-14	Subcapsular white focus(i) in kidney	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
-15	Hydroureter	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
-16	Firm kidneys	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 50 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
GROSS PATHOLOGIC OBSERVATIONS ON MALE RABBITS EXPOSED FOR UP TO 14 WEEKS^a
AND THEN HELD FOR UP TO 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
P-17	Kidneys - irregular surface pitted with white fibrous connective tissue extending from capsule into cortex	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-18	Pitted kidney cortex suggestive of neoplasia	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
P-20	Roughened or irregular appearance of kidneys	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
P-21	Mass or nodule involving kidney	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
<u>INTEGUMENT AND SUBCUTANEOUS</u>								
Q-8	Subcutaneous edema	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
Q-11	Subcutaneous abscess	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
Q-12	Subcutaneous region containing suppurative necrotic debris and fluid suggestive for suppurative inflammation	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	1	-	0	1
Q-13	Edema and fluid of the scrotal sac	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Diagnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>ENDOCRINE SYSTEM</u>								
	<u>Adrenals</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	1	1
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	4	8
A-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	-	0
		10.0	3	-	1	-	4	8
A-2	Malignant lymphoma, secondary site - bilateral	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
	<u>Pituitary Gland</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	4	8
P-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	4	8
	<u>Thyroid Gland</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	5	8
TH-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	4	7
TH-2	Colloid cyst - focal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0
TH-3	Atrophy with decreased secretory contents - bilateral, moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	1	1
	<u>Parathyroid Glands</u>	0	0	0	0	0	1	1
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	1	0	0	0	2	3
PG-1	No visible lesions	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	1	-	-	-	1	2

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>ENDOCRINE SYSTEM (cont'd)</u>								
<u>Parathyroid Glands (cont'd)</u>								
PG-2	Ectopic parathyroid tissue, thymus region, otherwise no visible lesions	0	-	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	1	1
<u>GASTROINTESTINAL SYSTEM</u>								
<u>Salivary Glands</u>								
	Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
SG-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	5	9
<u>Esophagus</u>								
	Number of tissues examined	0	1	0	0	0	5	6
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	2	0	1	0	5	8
ES-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	2	-	1	-	5	8
ES-2s	Subacute inflammation, muscularis - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	0	-	0	0
<u>Stomach - Number of tissues examined</u>								
		0	1	0	0	0	5	6
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	2	0	0	0	5	7
S-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	2	-	-	-	5	7
S-2	Reactive hyperplasia with associated acute inflammation, edema and multifocal necrosis, submucosal and mucosal edema, severe. Erosions, gastric mucosa, multifocal moderate. Fibrin thrombi in blood vessels, - multifocal	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS* AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Result
Diagnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>GASTROINTESTINAL SYSTEM (cont'd)</u>								
	<u>Small Intestine</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
SI-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	5	9
	<u>Large Intestine</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	4	8
LI-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	4	8
	<u>Sacculus Rotundus</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	5	5
SR-1	No visible lesions	0	0	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	5	5
SR-2	Granulomata and histiocytosis, submucosa - multifocal	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	0	0
	<u>Gallbladder</u>	0	0	0	0	0	4	4
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	3	0	0	0	5	8
GB-1	No visible lesions	0	-	-	-	-	3	3
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	3	-	-	-	5	8
GB-2m	Subacute inflammation, submucosa - diffuse, moderate	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
	<u>LIVER</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10

*Top dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LIVER (cont'd)</u>								
L-1	No visible lesions	0	0	-	-	0	0	0
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	1	2
L-2vs	Vacuolization of hepatocytes, consistent with fatty change - very slight	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
L-2s	Vacuolization of hepatocytes, consistent with fatty change - slight	0	1	-	-	0	0	1
		0.1	-	-	-	0	2	2
		1.0	-	-	0	0	1	1
		10.0	0	1	0	-	0	1
L-2m	Vacuolization of hepatocytes, consistent with fatty change - moderate	0	0	-	-	3	0	3
		0.1	-	-	-	3	0	3
		1.0	-	-	1	4	0	5
		10.0	1	0	0	-	0	1
L-3s	Aggregates of mononuclear predominantly lymphoid cells - slight	0	1	-	-	1	0	2
		0.1	-	-	-	2	0	2
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0
L-3m	Aggregates of mononuclear predominantly lymphoid cells - moderate	0	0	-	-	2	0	2
		0.1	-	-	-	0	0	0
		1.0	-	-	1	1	0	2
		10.0	0	0	0	-	0	0
L-4vs	Subacute inflammation, periportal - multifocal, very slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-4s	Subacute inflammation, periportal - multifocal, slight	0	0	-	-	0	2	2
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
L-4m	Subacute inflammation, periportal - multifocal, moderate	0	0	-	-	0	4	4
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	3	3
		10.0	0	0	0	-	3	3
L-5s	Subacute inflammation within lobule - multifocal, slight	0	0	-	-	0	1	1
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LIVER (cont'd)</u>								
L-15	Subacute inflammation, centrilobular - multifocal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-9s	Subacute inflammation with focal fibrosis - slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-6s	Centrilobular congestion with or without hepatocellular degeneration, multifocal coagulation necrosis and slight mononuclear and polymorphonuclear inflammation	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-12	Diffuse congestion	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	1	-	0	2
L-13	Coagulation necrosis - focal	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
L-7s	Biliary hyperplasia - focal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	1	0	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
L-8	Granulomata with mineralization, probably parasitic in origin - slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
L-10s	Dilated (telangiectatic) sinusoids, subcapsular region	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
L-14	Fibrinous adhesions, capsular surface - focal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
<u>PANCREAS</u> - Number of tissues examined								
		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 32 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>PANCREAS (cont'd)</u>								
PA-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	5	9
<u>RESPIRATORY SYSTEM</u>								
	<u>Trachea</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
TR-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	1	-	4	6
TR-2s	Aggregates of mononuclear predominantly lymphoid cells, submucosa - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	1	1
TR-3	Chronic active tracheitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
TR-4	Suppurative necrotizing tracheitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	0	-	0	1
TR-5	Mild acute tracheitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	0	-	0	1
	<u>Nasal Turbinates</u>	0	1	0	0	0	6	7
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	2	0	0	0	5	7
NT-1	No visible lesions	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	1	1
NT-2s	Aggregates of mononuclear predominantly lymphoid cells, submucosa - multifocal, slight	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	4	4

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Result
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>RESPIRATORY SYSTEM (cont'd)</u>								
<u>Nasal Turbinates (cont'd)</u>								
NT-3s	Acute inflammation with associated foreign body	0	0	-	-	-	1	1
	- focal, slight	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-4s	Focal ulcer with chronic active inflammation, mucosa and submucosa	0	0	-	-	-	1	1
	- slight	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-5s	Suppurative inflammation	0	0	-	-	-	1	1
	- slight	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-5m	Suppurative inflammation	0	0	-	-	-	1	1
	- moderate	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	0	0
NT-5sev	Suppurative inflammation	0	0	-	-	-	0	0
	- severe	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	0	-	-	-	1	1
NT-6m	Suppurative necrotizing rhinitis	0	0	-	-	-	0	0
	- moderate	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	1	-	-	-	0	1
NT-6sev	Suppurative necrotizing rhinitis	0	0	-	-	-	0	0
	- severe	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	1	-	-	-	0	1
	<u>Lungs - Number of tissues examined</u>	0	1	0	0	1	6	8
		0.1	0	0	0	1	0	1
		1.0	0	0	1	0	2	3
		10.0	3	1	1	0	5	10
LU-1	No visible lesions	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	0	-	0	1
LU-2s	Aggregates of mononuclear predominantly lymphoid cells, peribronchial	0	1	-	-	0	6	7
	- multifocal, slight	0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	5	5

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm) ^a	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>RESPIRATORY SYSTEM (cont'd)</u>								
<u>Lungs (cont'd)</u>								
LU-3	Bronchopneumonia and/or bronchiolitis - focal or multifocal	0	0	-	-	1	0	1
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	2	2
LU-6	Suppurative necrotizing bronchopneumonia - multifocal, severe	0	0	-	-	0	0	0
		0.1	-	-	-	1	-	1
		1.0	-	-	1	-	0	1
		10.0	1	0	0	-	0	1
LU-9	Interstitial pneumonia	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	0	-	0	1
LU-4s	Subacute inflammation - multifocal, slight	0	0	-	-	0	3	3
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	2	2
LU-5s, LU-5m, LU-5sev	Abscess formation	0	0	-	-	0	1	1
		0.1	-	-	-	1	-	1
		1.0	-	-	0	-	2	2
		10.0	0	1	0	-	1	2
LU-7	Atelectasis - multifocal	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	0	-	0	1
LU-8	Suppurative necrotizing pleuritis	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	0	1	-	0	2
LU-10s	Microgranulomata - multifocal, slight	0	0	-	-	0	0	0
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
<u>NERVOUS SYSTEM</u>								
<u>Peripheral Nerve</u>								
	Number of tissues examined	0	1	0	0	0	4	5
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	1	0	1	0	3	5
PN-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	1	-	1	-	3	5

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 32 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Result
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>NERVOUS SYSTEM (cont'd)</u>								
	<u>Spinal Cord</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	2	0	0	0	3	5
SC-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	2	-	-	-	3	5
	<u>Brain</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
B-1	No visible lesions	0	0	-	-	-	2	2
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	3	7
B-2	Chronic active meningitis and encephalitis, secondary to middle ear infection	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	0	0
B-3s	Subacute inflammation, perivascular - multifocal, slight	0	0	-	-	-	4	4
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	2	2
B-4s	Glial nodules - multifocal, slight	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	2	2
<u>MUSCULOSKELETAL SYSTEM</u>								
	<u>Skeletal Muscle</u>	0	1	0	0	0	5	6
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	5	8
SM-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	5	8
SM-2s	Atrophy - slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MUSCULOSKELETAL SYSTEM (cont'd)</u>								
	<u>Vertebral Bone</u>	0	0	0	0	0	5	5
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	4	4
VB-1	No visible lesions	0	-	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	4	4
	<u>Vertebral Bone Marrow</u>	0	0	0	0	0	5	5
	Number of tissues examined	0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	4	4
VBM-1	No visible lesions	0	-	-	-	-	4	4
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	4	4
VBM-2	Myeloid hyperplasia	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	0	0
	<u>Mandible</u> - Number of tissues examined	0	0	0	0	0	1	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
M-1	Abscess	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
	<u>Hock</u> - Number of tissues examined	0	0	0	0	0	1	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
HK-1sev	Chronic active inflammation with abscess formation	0	-	-	-	-	1	1
	- diffuse, severe	0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
<u>URINARY SYSTEM</u>								
	<u>Kidneys</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Kidneys (cont'd)</u>								
K-1	No visible lesions	0	0	-	-	2	1	3
		0.1	-	-	-	2	1	3
		1.0	-	-	0	2	0	2
		10.0	3	0	1	-	0	4
K-2s	Mineral deposits, renal pelvis	0	1	-	-	0	0	1
	- unilateral or bilateral,	0.1	-	-	-	0	2	2
	focal or multifocal,	1.0	-	-	0	0	0	0
	slight	10.0	0	1	0	-	2	3
K-5,	Mineral deposits, corticomedullary	0	0	-	-	0	0	0
K-5s	junction - unilateral or bilateral,	0.1	-	-	-	0	2	2
	multifocal	1.0	-	-	0	1	3	4
		10.0	0	0	0	-	1	1
K-3s	Subacute inflammation, interstitium,	0	0	-	-	1	5	6
	with or without fibrosis	0.1	-	-	-	2	4	6
	- multifocal, slight	1.0	-	-	0	2	5	7
		10.0	0	1	0	-	3	4
K-3m	Subacute inflammation, intersitium,	0	0	-	-	0	0	0
	with or without fibrosis	0.1	-	-	-	0	0	0
	- multifocal, moderate	1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
K-8sev	Hydronephrosis	0	0	-	-	0	0	0
	- unilateral, severe	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
K-4s	Dilated renal tubules with eosino-	0	0	-	-	1	0	1
	philic cast formation	0.1	-	-	-	0	0	0
	- multifocal, slight	1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
K-7s	Cyst, cortex - multifocal, bilateral,	0	0	-	-	0	0	0
	slight	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	1	1
K-6	Malignant lymphoma, secondary site	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
	<u>Urinary Bladder</u>	0	1	0	0	0	5	6
	<u>Number of tissues</u>	0.1	0	0	0	0	1	1
		1.0	0	0	1	0	2	3
		10.0	1	1	1	0	5	8

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS* AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Diagnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Urinary Bladder (cont'd)</u>								
3-1	No visible lesions	0	1	-	-	-	3	4
		0.1	-	-	-	-	0	0
		1.0	-	-	1	-	0	1
		10.0	1	1	1	-	2	5
3-2s	Aggregates of mononuclear predom- inantly lymphoid cells - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	0	0
3-3s	Subacute inflammation, mucosa and submucosa - multifocal, slight	0	0	-	-	-	1	1
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	0	0
3-3m	Subacute inflammation, mucosa and submucosa - multifocal, moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
3-4sev	Chronic active inflammation, mucosa and submucosa - severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	2	2
B-5m	Edema, mucosa and submucosa - moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
B-5sev	Edema, mucosa and submucosa - severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	2	2
B-6m	Increased vascularity, submucosa - moderate	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
B-6sev	Increased vascularity, submucosa - severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	1	1
B-7s	Hyperplasia, mucosa - multifocal, slight	0	0	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1

*Top dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Urinary Bladder (cont'd)</u>								
UB-7m	Hyperplasia, mucosa	0	0	-	-	-	0	0
	- multifocal, moderate	0.1	-	-	-	-	0	0
		1.0	-	-	0	-	0	0
		10.0	0	0	0	-	1	1
UB-7sev	Hyperplasia, mucosa	0	0	-	-	-	0	0
	- multifocal, severe	0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	0	0
UB-8sev	Ulceration - multifocal, severe	0	0	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	0	-	2	2
		10.0	0	0	0	-	0	0
<u>Urethra - Number of tissues examined</u>								
		0	0	0	0	0	5	5
		0.1	0	0	0	0	6	6
		1.0	0	0	0	0	5	5
		10.0	0	0	0	0	5	5
UA-1	No visible lesions	0	-	-	-	-	3	3
		0.1	-	-	-	-	3	3
		1.0	-	-	-	-	4	4
		10.0	-	-	-	-	2	2
UA-2vs	Subacute inflammation, mucosa and submucosa - diffuse, very slight	0	-	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	0	0
UA-2s	Subacute inflammation, mucosa and submucosa - diffuse, slight	0	-	-	-	-	0	0
		0.1	-	-	-	-	1	1
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	1	1
UA-2m	Subacute inflammation, mucosa and submucosa - diffuse, moderate	0	-	-	-	-	1	1
		0.1	-	-	-	-	0	0
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	1	1
UA-2sev	Subacute inflammation, mucosa and submucosa - diffuse, severe	0	-	-	-	-	0	0
		0.1	-	-	-	-	0	0
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	1	1
UA-3m	Chronic active inflammation, mucosa and submucosa	0	-	-	-	-	1	1
	- diffuse, moderate	0.1	-	-	-	-	1	1
		1.0	-	-	-	-	1	1
		10.0	-	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Diagnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>URINARY SYSTEM (cont'd)</u>								
<u>Urethra (cont'd)</u>								
1-4m	Epithelial hyperplasia	0	-	-	-	-	1	1
	- diffuse, moderate	0.1	-	-	-	-	0	0
		1.0	-	-	-	-	0	0
		10.0	-	-	-	-	0	0
<u>CARDIOVASCULAR SYSTEM</u>								
<u>Heart - Number of tissues examined</u>								
		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	0	-	5	8
-2s	Subacute inflammation, myocardium	0	0	-	-	-	1	1
	- focal, slight	0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	0	0
-3	Severe necrotizing epicarditis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	1	-	0	1
<u>Aorta - Number of tissues examined</u>								
		0	1	0	0	0	5	6
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	5	8
0-1	No visible lesions	0	1	-	-	-	4	5
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	5	8
0-2s	Subacute inflammation, subintimal	0	0	-	-	-	1	1
	- focal, slight	0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0
<u>Mesenteric Blood Vessels</u>								
<u>Number of tissues examined</u>								
		0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	3	0	0	0	0	3

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DECP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>CARDIOVASCULAR SYSTEM (cont'd)</u>								
<u>Mesenteric Blood Vessels (cont'd)</u>								
MBV-1	No visible lesions	0	-	-	-	-	-	-
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	3	-	-	-	-	3
<u>ABDOMINAL CAVITY</u>								
<u>Mesenteric Fat</u>								
	Number of tissues examined	0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	0	3
MF-1	No visible lesions	0	-	-	-	-	-	-
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	-	3
<u>Omentum - Number of tissues examined</u>								
		0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	1	1
O-1	Parasitic granulomas with calcification - multifocal	0	-	-	-	-	-	-
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	1	1
<u>HEAD REGION</u>								
<u>Lacrimal Gland</u>								
	Number of tissues examined	0	0	0	0	0	1	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
LG-1	Subacute inflammation	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
<u>Eyes - Number of tissues examined</u>								
		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
EY-1	No visible lesions	0	1	-	-	-	5	6
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	1	-	4	8
EY-2s	Aggregates of mononuclear predominantly lymphoid cells, corneal scleral junction	0	0	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
	- focal, unilateral, slight	10.0	0	-	0	-	1	1

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>HEAD REGION (cont'd)</u>								
<u>Middle Ear</u>								
	Number of tissues examined	0	1	0	0	0	0	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
TE-1	Severe suppurative otitis media with necrotizing inflammation of the bone	0	1	-	-	-	-	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-
<u>THORACIC CAVITY</u>								
<u>Anterior Mediastinum</u>								
	Number of tissues examined	0	0	0	0	0	0	0
		0.1	0	0	0	1	0	1
		1.0	0	0	1	0	1	2
		10.0	2	0	0	0	0	2
AM-1sev	Abscess formation - severe, multifocal	0	-	-	-	-	-	-
		0.1	-	-	-	1	-	1
		1.0	-	-	0	-	1	1
		10.0	0	-	-	-	-	0
AM-2	Localized suppurative anterior mediastinitis	0	-	-	-	-	-	-
		0.1	-	-	-	0	-	0
		1.0	-	-	1	-	0	1
		10.0	0	-	-	-	-	0
AM-3	No visible lesions	0	-	-	-	-	-	-
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	-	-	-	-	1
AM-4	Suppurative necrotizing mediastinitis	0	-	-	-	-	-	-
		0.1	-	-	-	0	-	0
		1.0	-	-	0	-	0	0
		10.0	1	-	-	-	-	1
<u>Anterior Mediastinal Fat</u>								
	Number of tissues examined	0	1	0	0	0	0	1
		0.1	0	0	0	0	0	0
		1.0	0	0	0	0	0	0
		10.0	0	0	0	0	0	0
AMF-1	No visible lesions	0	1	-	-	-	-	1
		0.1	-	-	-	-	-	-
		1.0	-	-	-	-	-	-
		10.0	-	-	-	-	-	-

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM</u>								
	<u>Testes</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
T-1	No visible lesions	0	1	-	-	1	5	7
		0.1	-	-	-	1	5	6
		1.0	-	-	0	0	3	3
		10.0	0	0	0	-	0	0
T-2um	Atrophy (decreased spermatogenesis)	0	0	-	-	1	0	1
	- unilateral, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
T-2bs	Atrophy (decreased spermatogenesis)	0	0	-	-	0	0	0
	- bilateral, slight	0.1	-	-	-	0	0	0
		1.0	-	-	1	0	0	1
		10.0	0	0	0	-	0	0
T-2bm	Atrophy (decreased spermatogenesis)	0	0	-	-	0	0	0
	- bilateral, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	3	1	4
		10.0	0	0	0	-	0	0
T-2b,sev	Atrophy (decreased spermatogenesis)	0	0	-	-	0	0	0
	- bilateral, severe	0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	3	1	1	-	5	10
T-3	Hypoplastic seminiferous tubules	0	0	-	-	1	0	1
	- focal	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
T-4us	Multinucleated spermatids	0	0	-	-	1	0	1
	- unilateral, slight	0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	1	0	0	-	0	1
T-4bs	Multinucleated spermatids	0	0	-	-	1	0	1
	- bilateral, slight	0.1	-	-	-	3	0	3
		1.0	-	-	1	2	0	3
		10.0	0	0	0	-	3	3
T-4bm	Multinucleated spermatids	0	0	-	-	0	0	0
	- bilateral, moderate	0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

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TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Number of rabbits per group	0	1	0	0	3	6	10
Code	0.1	0	0	0	4	6	10
	1.0	0	0	1	4	5	10
	10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>							
<u>Testes (cont'd)</u>							
-5a	Atrophy, primarily subcapsular, probably secondary to severe stress and cachexia	0	0	-	0	1	1
	- bilateral, moderate	0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
-6a	Necrotic debris in the lumen of the seminiferous tubules	0	0	-	1	0	1
	- unilateral	0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
-6b,	Necrotic debris in the lumen of the seminiferous tubules	0	0	-	0	0	0
-6bs,		0.1	-	-	0	0	0
-6bm	- bilateral	1.0	-	1	3	0	4
		10.0	2	0	-	0	2
-7b	Increased prominence of Sertoli cells, secondary to decreased spermatogenesis	0	0	-	0	0	0
	- bilateral	0.1	-	-	0	0	0
		1.0	-	1	2	0	3
		10.0	3	1	-	0	5
-8a	Mononuclear predominately lymphoid cell inflammation	0	0	-	0	0	0
	- focal, slight	0.1	-	-	0	0	0
		1.0	-	0	1	0	1
		10.0	0	0	-	0	0
-9a	Normal-appearing seminiferous tubules occupying less than 25% of total sections	0	0	-	0	0	0
	- multifocal	0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	3	3
-9b	Normal-appearing seminiferous tubules occupying between 25% and 50% of total sections	0	0	-	0	0	0
	- multifocal	0.1	-	-	0	0	0
		1.0	-	0	0	0	0
		10.0	0	0	-	2	2
-10as	Dilated seminiferous tubules with decreased spermatogenic elements	0	0	-	0	0	0
	- unilateral, slight	0.1	-	-	0	0	0
		1.0	-	0	0	1	1
		10.0	0	0	-	0	0
-10bm	Dilated seminiferous tubules with decreased spermatogenic elements	0	0	-	0	0	0
	- bilateral, moderate	0.1	-	-	0	1	1
		1.0	-	0	0	0	0
		10.0	0	0	-	0	0
<u>Epididymides</u>							
Number of tissues examined	0	1	0	0	3	6	10
	0.1	0	0	0	4	6	10
	1.0	0	0	1	4	5	10
	10.0	3	1	1	0	5	10

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>								
<u>Epididymides (cont'd)</u>								
E-1	No visible lesions	0	1	-	-	2	6	9
		0.1	-	-	-	4	6	10
		1.0	-	-	1	0	3	4
		10.0	0	0	0	-	0	0
E-2	Sperm granuloma	0	0	-	-	1	0	1
	- focal	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
E-3u	Decreased sperm in tubular lumina	0	0	-	-	1	0	1
	- unilateral	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	0	0
E-3b	Decreased sperm in tubular lumina	0	0	-	-	0	0	0
	- bilateral	0.1	-	-	-	0	0	0
		1.0	-	-	0	2	0	2
		10.0	2	1	1	-	0	4
E-3b,sev	Decreased sperm in tubular lumina	0	0	-	-	0	0	0
	- bilateral, severe	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	0	-	5	5
E-4us	Epithelial hyperplasia	0	0	-	-	0	0	0
	- unilateral, slight	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	1	1
		10.0	0	0	0	-	0	0
E-5us	Vacuolization, mucosa	0	0	-	-	0	0	0
	- multifocal, uni-	0.1	-	-	-	0	0	0
	lateral, slight	1.0	-	-	0	0	2	2
		10.0	0	0	0	-	0	0
E-6b	Decreased in size (atrophy)	0	0	-	-	0	0	0
	- bilateral	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	1	1	0	-	5	7
E-7b	Increased intratubular, cellular,	0	0	-	-	0	0	0
	and/or proteinaceous debris	0.1	-	-	-	0	0	0
	- bilateral	1.0	-	-	0	0	0	0
		10.0	0	0	0	-	5	5
E-8b	Questionable (equivocal) decrease	0	0	-	-	0	0	0
	in sperm, tubular lumina	0.1	-	-	-	0	0	0
	- bilateral	1.0	-	-	0	2	0	2
		10.0	0	0	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
Diagnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>MALE REPRODUCTIVE SYSTEM (cont'd)</u>								
	<u>Accessory Sex Glands</u>	0	1	0	0	3	6	10
	Number of tissues examined	0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
S-1	No visible lesions	0	1	-	-	3	6	10
		0.1	-	-	-	4	6	10
		1.0	-	-	1	4	5	10
		10.0	3	1	1	-	5	10
	<u>Prostate</u> - Number of tissues examined	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	0	0	5	9
R-1	No visible lesions	0	1	-	-	1	6	8
		0.1	-	-	-	1	3	4
		1.0	-	-	1	3	3	7
		10.0	3	1	-	-	5	9
R-2s	Aggregates of mononuclear predom- inantly lymphoid cells, submucosa	0	0	-	-	2	0	2
	- multifocal, slight	0.1	-	-	-	0	0	0
		1.0	-	-	0	0	0	0
		10.0	0	0	-	-	0	0
R-3, R-3s	Squamous metaplasia, with or without keratinization	0	0	-	-	0	0	0
	- focal or multifocal	0.1	-	-	-	3	1	4
		1.0	-	-	0	1	0	1
		10.0	0	0	-	-	0	0
R-4s	Epithelial hyperplasia	0	0	-	-	0	0	0
	- focal or multifocal, slight	0.1	-	-	-	0	2	2
		1.0	-	-	0	0	1	1
		10.0	0	0	-	-	0	0
R-5s	Subacute inflammation	0	0	-	-	0	0	0
	- multifocal, slight	0.1	-	-	-	0	1	1
		1.0	-	-	0	0	0	0
		10.0	0	0	-	-	0	0
R-6s	Interstitial fibrosis	0	0	-	-	0	0	0
	- slight	0.1	-	-	-	0	1	1
		1.0	-	-	0	0	1	1
		10.0	0	0	-	-	0	0
R-7	Dilated acini	0	0	-	-	0	0	0
		0.1	-	-	-	0	0	0
		1.0	-	-	0	1	0	1
		10.0	0	0	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

Diagnosis Code	Number of rabbits per group	Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
		0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LYMPHORETICULAR SYSTEM</u>								
LS-1	Malignant lymphoma, primary site	0	0	0	0	0	0	0
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	0	0	0	0	0	0
	<u>Thymus</u> - Number of tissues examined	0	0	0	0	0	6	6
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	4	7
TY-1	No visible lesions	0	-	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	4	4
TY-2sev	Atrophy - severe	0	-	-	-	-	1	1
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	3	-	-	-	0	3
	<u>Spleen</u> - Number of tissues examined	0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	1	0	5	9
SP-1	No visible lesions	0	0	-	-	-	6	6
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	3	-	1	-	5	9
SP-2	Acute splenitis	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	0	-	0	0
SP-3	Severe congestion	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
SP-4	Hemosiderin within histiocytes	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0
SP-5	Malignant lymphoma, secondary site	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	0	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 51 (Continued)

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

HISTOPATHOLOGIC OBSERVATIONS AND NUMBER OF TISSUES EXAMINED ON MALE RABBITS
EXPOSED FOR UP TO 14 WEEKS^a AND THEN HELD FOR 32 WEEKS OF RECOVERY

		Exposure Level (ppm)	0-8 Weeks	8-Week Interim Kill	8-14 Weeks	14-Week Interim Kill	Terminal Kill	Cumulative Results
agnosis Code	Number of rabbits per group	0	1	0	0	3	6	10
		0.1	0	0	0	4	6	10
		1.0	0	0	1	4	5	10
		10.0	3	1	1	0	5	10
<u>LYMPHORETICULAR SYSTEM (cont'd)</u>								
<u>Mesenteric Lymph Nodes</u>		0	1	0	0	0	5	6
Number of tissues examined		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	3	0	0	0	2	5
N-1	No visible lesions	0	0	-	-	-	5	5
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	3	-	-	-	2	5
N-2	Reactive lymphoid hyperplasia, paracortical zones and medullary cords	0	1	-	-	-	0	1
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	0	-	-	-	0	0
N-3	Free and phagocytized red blood cell, medullary sinuses	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	-	-	0	0
<u>Anterior Mediastinal Lymph Nodes</u>		0	1	0	0	0	2	3
Number of tissues examined		0.1	0	0	0	0	0	0
		1.0	0	0	1	0	0	1
		10.0	1	0	0	0	3	4
N-1	No visible lesions	0	1	-	-	-	2	3
		0.1	-	-	-	-	-	-
		1.0	-	-	0	-	-	0
		10.0	1	-	-	-	3	4
N-2	Suppurative lymphadenitis	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	1	-	-	1
		10.0	0	-	-	-	0	0
<u>SKIN AND SUBCUTANEOUS</u>								
<u>Skin - Number of tissues examined</u>		0	1	0	0	0	6	7
		0.1	0	0	0	0	0	0
		1.0	0	0	1	1	0	2
		10.0	2	0	0	0	5	7
G-1	No visible lesions	0	1	-	-	-	6	7
		0.1	-	-	-	-	-	-
		1.0	-	-	1	0	-	1
		10.0	2	-	-	-	5	7
G-2	Subcutaneous abscess formation	0	0	-	-	-	0	0
		0.1	-	-	-	-	-	-
		1.0	-	-	-	1	-	1
		10.0	0	-	-	-	0	0

^aTop dose rabbits (10 ppm) were only exposed for 8 weeks and held for 38 weeks of recovery.
- Indicates none examined or not applicable.

TABLE 52

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

CAUSE OF DEATH OR MORIBUND CONDITION OF RABBITS
DYING OR KILLED MORIBUND DURING THE RECOVERY PERIOD

<u>Pathology Number</u>	<u>Exposure Concentrate (ppm)</u>	<u>Weeks of Exposure or Recovery</u>	<u>Possible or Probable Cause of Death or Illness</u>
78-186	0	7 weeks of exposure	Severe suppurative otitis media with secondary bone and brain inflammation.
78-867	1.0	10 weeks of exposure	Severe rhinitis and bronchopneumonia.
78-154	10	7 weeks of exposure	Not determined.
78-155	10	7 weeks of exposure	Severe rhinitis and bronchopneumonia
78-192	10	8 weeks of exposure	Suppurative pleuritis and pneumonia.
78-880	10	8 weeks of exposure plus 3 weeks of recovery	Severe pleuritis and epicarditis.

TABLE 53

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP RATS AND RABBITS

NUMBER OF RABBITS EXAMINED BY ELECTRON MICROSCOPY

<u>Exposure Level (ppm)</u>	<u>Number Examined After 8 Weeks Exposure</u>	<u>Number Examined After 14 Weeks Exposure</u>	<u>Number Examined After Recovery Period</u>
0	0	3	6
0.1	0	4	3
1	0	4	3
10	1	0	3

DO 131262
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TABLE 54

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS

NUMBER OF ULTRASTRUCTURALLY ABNORMAL SPERMATOZOA IN RABBITS
IMMEDIATELY AFTER EXPOSURE PERIOD

<u>Duration of Exposure</u>	<u>Dose Level</u>	<u>Pathology Number</u>	<u>Number of Abnormal Spermatozoa</u>	<u>Number of Normal Spermatozoa</u>	<u>Total Number of Spermatozoa Counted</u>	<u>Percent of Abnormal Spermatozoa</u>	<u>Average Percentage Abnormal Spermatozoa</u>	<u>Mean Percent ± S.D.</u>
14 weeks	0 ppm	78-791	18	222	240	3%		
		78-792	103	100	203	51%		
		78-793	4	55	59	7%		
		overall					5% ^a	5±3% ^a
14 weeks	0.1 ppm	78-799	15	93	108	14%		
		78-800	10	124	134	7%		
		78-801	19	176	195	10%		
		78-802	13	112	125	10%		
		overall					10%	10±3%
14 weeks	1.0 ppm	78-795	17	178	195	9%		
		78-796	52	97	149	35%		
		78-797	44	210	254	17%		
		78-798	19	146	165	12%		
		overall					18%	18±12%
8 weeks	10 ppm	78-226	none present	none present	-	-	-	-

^aWithout rabbit number 78-792 which had a spontaneous unilateral testicular abnormality.

TABLE 55

SUBCHRONIC INHALATION REPRODUCTIVE TOXICITY AND RECOVERY STUDY
OF DBCP IN RATS AND RABBITS
NUMBER OF ULTRASTRUCTURALLY ABNORMAL SPERMATOZOA IN RABBITS
AFTER RECOVERY PERIOD

<u>Duration of Exposure</u>	<u>Dose Level</u>	<u>Pathology Number</u>	<u>Number of Abnormal Spermatozoa</u>	<u>Number of Normal Spermatozoa</u>	<u>Total Number of Spermatozoa Counted</u>	<u>Percent of Abnormal Spermatozoa</u>	<u>Average Percentage Abnormal Spermatozoa</u>	<u>Mean Percent ± S.D.</u>
14 weeks exposure plus 32 weeks recovery	0 ppm	78-1732 78-1733 78-1734 78-1735 78-1736 78-1737	6 9 8 4 0 6	107 163 72 72 67 83	113 172 80 76 67 89	5% 5% 10% 5% 0% 7%		
		overall					5%	5±3%
14 weeks exposure plus 32 weeks exposure	0.1 ppm	78-1738 78-1739 78-1740	11 9 6	200 109 102	211 118 108	5% 8% 6%		
		overall					6%	6±2%
14 weeks exposure plus 32 weeks recovery	1.0 ppm	78-1744 78-1745 78-1746	29 28 11	160 52 39	189 80 50	15% 35% 22%		
		overall					24%	24±10%
8 weeks exposure plus 38 weeks recovery	10 ppm	78-1749 78-1750 78-1751	5 11 10	19 25 110	24 36 120	21% 31% 8%		
		overall					20%	20±12%

-230-

1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

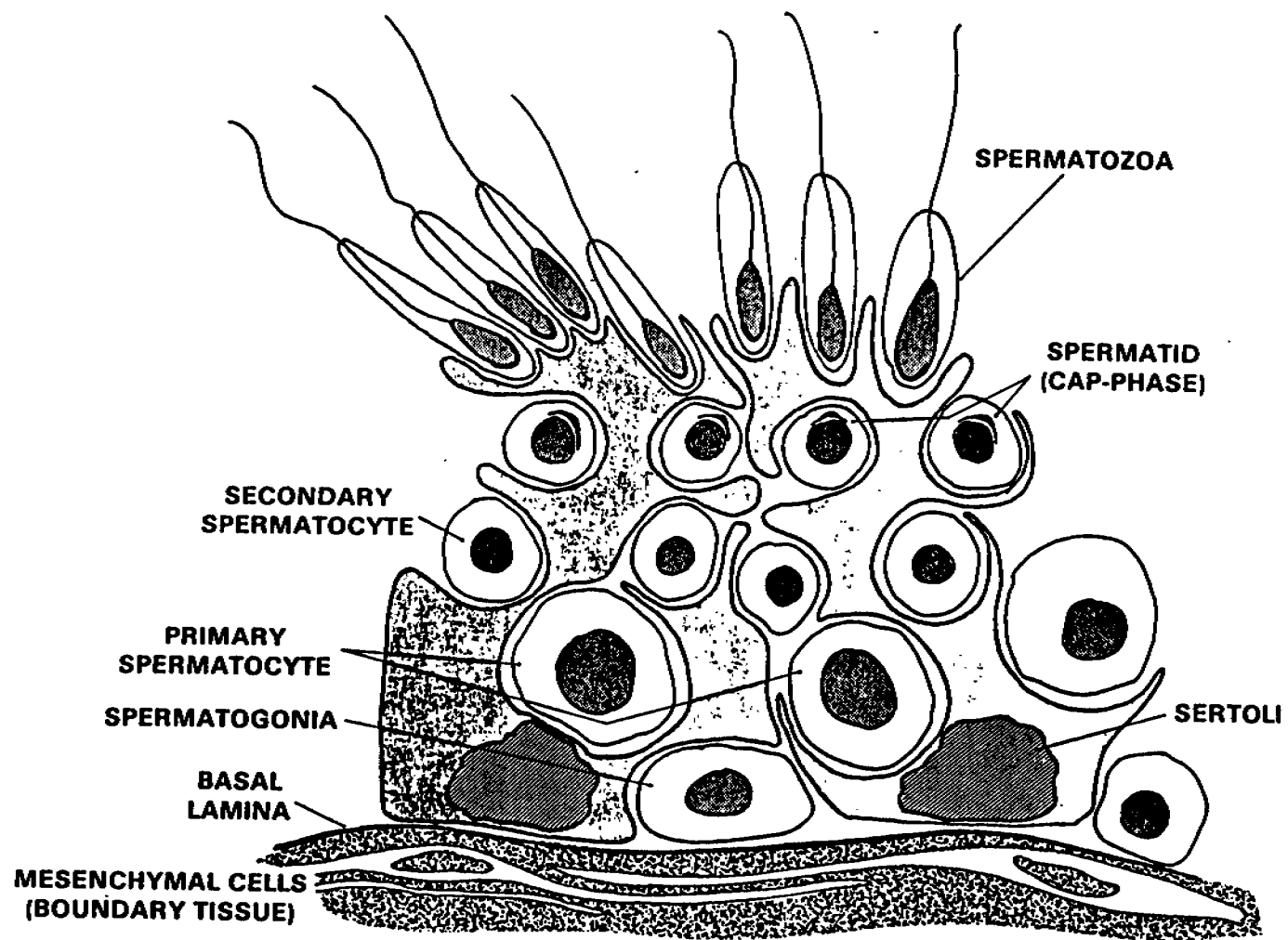
TEXT FIGURES - 1-9

LEGEND TO FIGURES

- FIGURE 1 Schematic Illustration of the cells within a normal seminiferous tubule.
- FIGURE 2 Normal seminiferous tubule showing Sertoli cells (SC) and spermatogonia (SG) on the basal lamella (BL) and the relationship of these structures to the primary (PR) and secondary (SEC) spermatocytes. Original magnification 2,600X.
- FIGURE 3 Normal seminiferous tubule near the luminal surface illustrating cap-phase spermatids (CP) and spermatozoa (S). Original magnification 2,070X.
- FIGURE 4 Seminiferous tubule from a rabbit exposed to 10 ppm of DBCP for 8 weeks. Note the absence of spermatozoa on the luminal surface and the absence of spermatogonia, primary and secondary spermatocytes, and the lack of cap-phase spermatids. Original magnification 2,600X.
- FIGURE 5 A. Interstitial cell from a control rabbit.
B. Interstitial cell from a rabbit exposed to 10 ppm of DBCP and containing increased lysosomes (LY) in the cytoplasm.
Original magnification 4,100X.
- FIGURE 6 Normal-appearing seminiferous tubule from a rabbit that had been exposed to 10 ppm of DBCP for 8 weeks followed by 38 weeks of recovery. BL = basal lamella; SG = spermatogonia; SC = Sertoli cell; and PR = primary spermatocyte. Original magnification 8,300X.

LEGENDS TO FIGURES (Con't)

- FIGURE 7 Seminiferous tubule from a rabbit exposed to 10 ppm DBCP for 8 weeks followed by 38 weeks of recovery. Note the absence of spermatogenesis. BL = basal lamella and SC = Sertoli cell. Original magnification 8,300X.
- FIGURE 8 Abnormal spermatozoa seen in rabbits exposed to 1 or 10 ppm of DBCP. A-C are from control rabbits and D-F are from treated rabbits.
- FIGURE 9 Seminiferous tubule from a rabbit exposed to 1 ppm of DBCP for 14 weeks followed by 32 weeks of recovery. Note the degenerative spermatozoa (†) within Sertoli cells (SC). BL = basal lamella and PR = primary spermatocyte. Original magnification 8,300X.



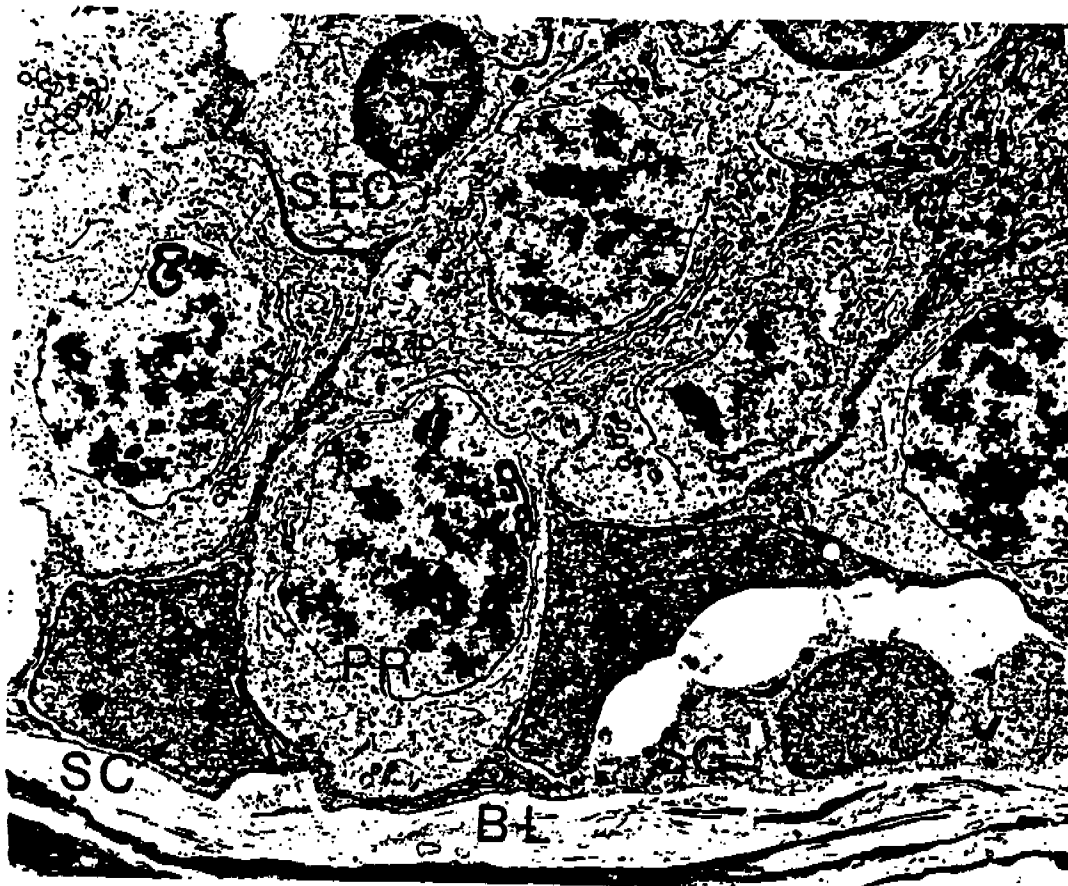


Fig. 2



Fig. 3

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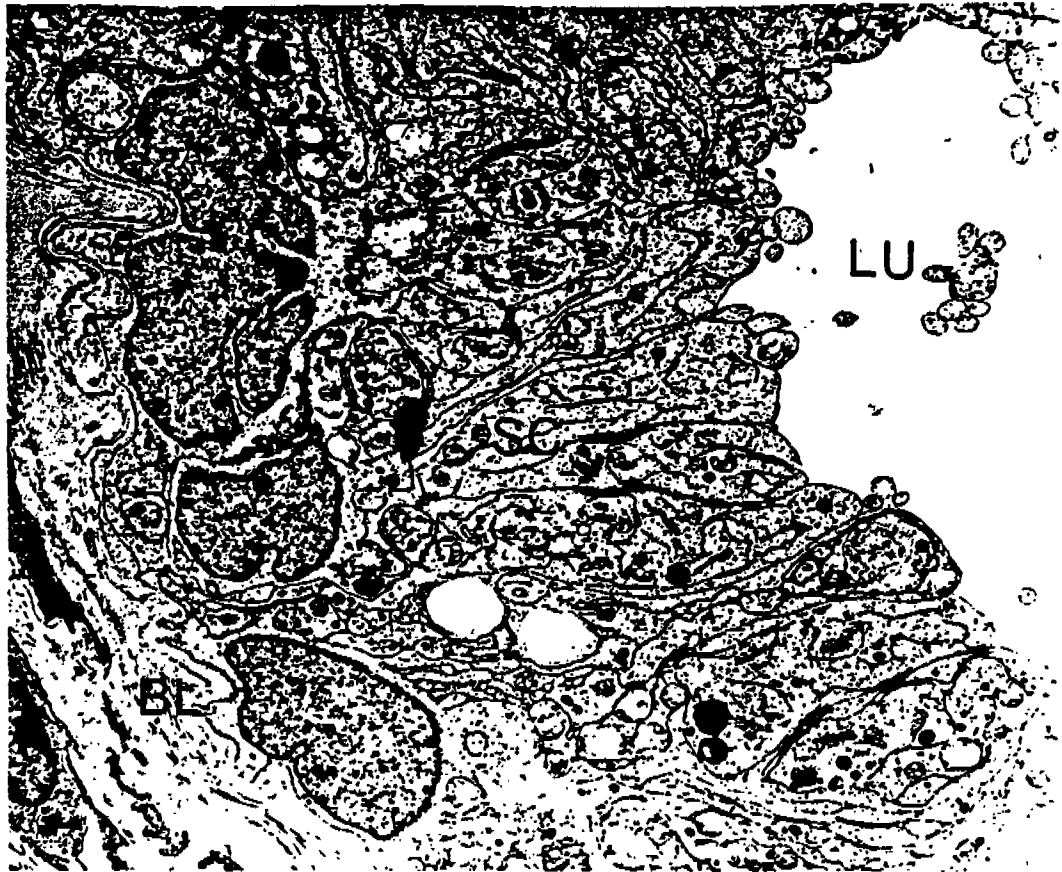


Fig. 4

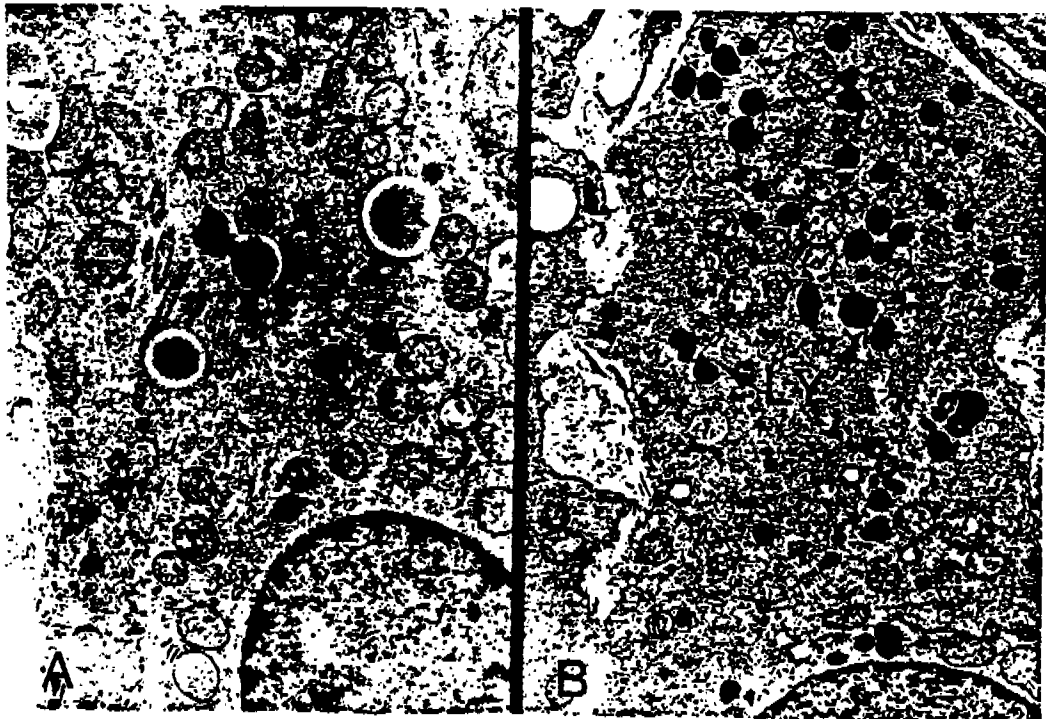


Fig. 5



Fig. 6



Fig. 7

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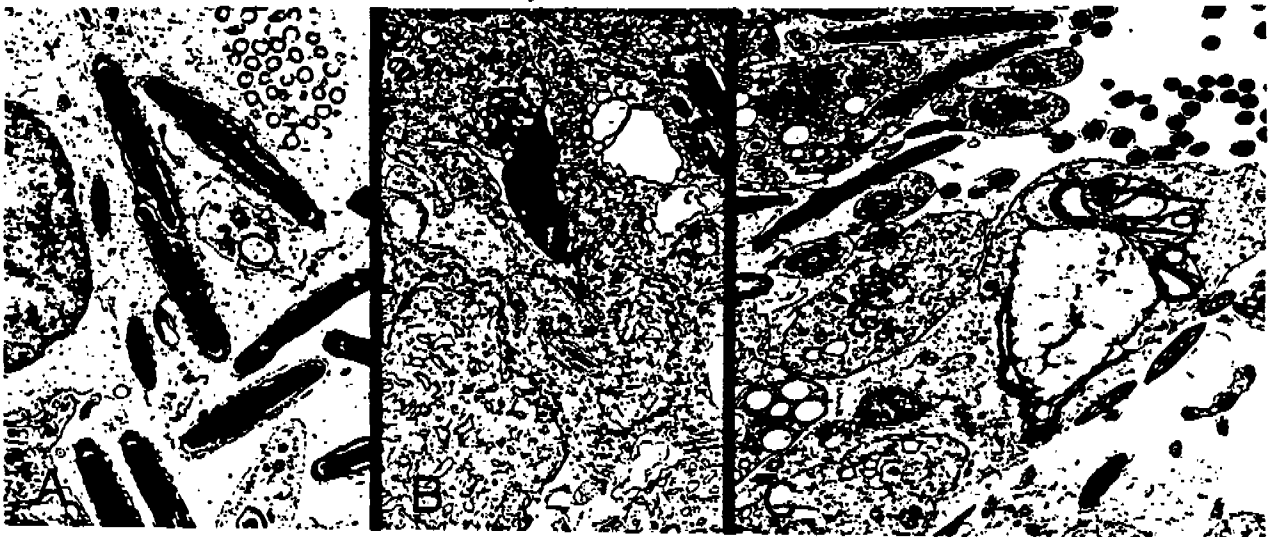


Fig. 8



Fig. 9

1,2-DIBROMO-3-CHLOROPROPANE: INHALATION FERTILITY
STUDY IN RATS AND RABBITS

INDIVIDUAL ANIMAL DATA TABLES A-1 TO A-44

Table A-1 (Continued)

DSCP: INHALATION FERTILITY STUDY IN THE RAT¹

RAT: Male Body Weights (grams)

Exposure Level	Animal Number	Week of Study														
ppm		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Control	77-7454	Sacrificed														
	7455	Sacrificed														
	7456	Sacrificed														
	7457	Sacrificed														
	7458	Sacrificed														
	7459	Sacrificed														
	7460	Sacrificed														
	7461	Sacrificed														
	7462	Sacrificed														
	7463	Sacrificed														
	7464	Sacrificed														
	7465	Sacrificed														
	7466	Sacrificed														
	7467	Sacrificed														
	7468	Sacrificed														
	7469	554.0	577.1	574.2	584.5	598.3	597.8	611.0	616.6	620.6	599.9	611.2	617.9	621.6	636.6	620.2
	7470	525.1	537.1	543.9	553.0	556.8	561.4	559.9	581.2	586.0	568.2	577.5	579.2	581.8	596.8	584.6
	7471	658.4	679.6	683.0	694.8	692.5	686.7	708.6	713.0	725.7	699.5	707.2	712.3	719.6	740.9	714.8
	7472	578.2	587.7	594.3	601.6	606.9	601.7	614.9	601.5	621.7	612.5	611.8	618.6	620.8	640.9	629.1
	7473	533.3	535.8	537.1	558.2	546.6	548.9	560.0	581.0	581.9	564.1	570.9	583.1	581.9	599.3	571.8
7474	589.2	592.0	594.5	608.8	611.4	609.2	622.4	630.9	647.8	612.8	624.7	631.5	642.0	652.8	639.2	
7475	573.1	588.6	586.0	587.3	587.9	594.7	604.4	597.0	606.1	593.1	596.1	605.1	610.5	623.8	608.0	
7476	523.2	538.6	531.3	530.7	529.5	538.9	553.9	553.4	567.4	549.7	566.6	558.2	559.2	580.1	565.7	
7477	737.8 ^a	748.6 ^a	750.2 ^a	755.6 ^a	759.9 ^a	762.1 ^a	765.4 ^a	767.4	784.7	766.3 ^a	766.6	792.9 ^a	784.1	798.4	780.8	
7478	558.8	574.6	573.1	586.5	596.8	597.5	605.6	603.7	616.5	596.1	601.2	610.0	621.9	637.9	622.1	
7479	590.7	606.3	612.4	599.4	612.8	621.1	618.6	641.5	649.6	629.1	638.6	657.1	658.1	667.5	645.7	
7480	555.2	570.3	566.7	573.2	563.7	571.9	583.6	592.3	601.4	583.0	590.8	614.5	608.0	617.3	597.2	
7481	597.2	609.1	612.9	623.8	619.6	621.5	638.7	637.7	654.2	636.9	630.1	632.3	634.3	673.3	646.2	
7482	566.5	574.4	582.8	586.2	586.0	597.0	611.7	631.4	627.8	622.0	624.4	642.5	647.7	660.3	640.9	
7483	597.8	613.1	616.1	631.6	619.9	630.6	642.5	647.0	664.3	646.3	652.4	656.2	672.0	700.3	681.0	
7484	575.1	582.3	585.2	578.5	584.5	595.3	595.1	604.8	617.1	603.8	610.5	624.6	620.0	627.8	622.0	
7485	629.0	647.8	654.9	661.7	660.1	674.6	692.9	693.9	700.0	688.0	688.6	692.8	713.3	714.6	690.1	
7486	588.0	602.8	589.7	610.7	617.6	628.4	638.5	655.6	671.0	644.6	653.0	666.4	677.2	676.6	676.6	
7487	547.2	558.3	551.2	548.8	544.9	548.6	568.7	565.9	562.2	547.6	556.2	557.8	556.5	559.7	545.5	
7488	533.4	548.3	552.7	559.5	560.5	563.6	580.2	569.8	597.7	578.7	592.1	599.5	607.6	604.6	598.1	
Mean		572	585	586	594	594	599	611	624	635	609	634	624	636	650	634
±S.D.		±35	±37	±38	±40	±40	±40	±42	±53	±55	±42	±59	±41	±56	±57	±55
0.1	77-7524	Sacrificed														
	7525	Sacrificed														
	7526	Sacrificed														
	7527	Sacrificed														
	7528	Sacrificed														
	7529	Sacrificed														
	7530	Sacrificed														
	7531	Sacrificed														
	7532	Sacrificed														
	7533	Sacrificed														
	7534	Sacrificed														
	7535	Sacrificed														
	7536	Sacrificed														
	7537	Sacrificed														
	7538	Sacrificed														
	7539	606.9	614.3	612.6	624.8	615.5	625.0	642.3	654.2	652.8	640.0	650.5	666.5	673.9	676.2	664.5
	7540	548.3	568.9	590.0	611.0	595.5	606.1	630.1	643.7	661.5	628.5	644.3	660.4	670.2	685.4	656.4
	7541	575.6	588.1	589.1	597.3	593.6	606.9	643.2	603.6	627.2	616.1	617.9	622.2	619.0	637.3	631.6
	7542	518.8	522.3	528.6	535.2	530.7	533.8	579.7	554.6	566.6	560.1	552.6	565.8	564.3	572.1	580.6
	7543	597.4	614.7	617.5	607.8	611.3	618.5	634.3	650.6	652.2	629.6	638.0	644.2	662.1	663.6	648.2
7544	584.6	593.9	600.2	600.4	599.3	603.5	614.7	625.5	631.2	613.9	619.6	636.0	645.2	651.4	627.7	
7545	614.3	617.7	621.4	632.6	628.9	643.0	642.4	657.8	662.4	636.9	647.3	652.5	648.9	658.4	630.9	
7546	551.0	575.2	582.5	579.4	578.6	588.6	602.2	606.6	626.4	605.1	618.9	634.2	642.2	647.1	639.6	
7547	562.2	575.1	571.8	573.8	577.0	581.6	597.1	599.4	617.7	597.7	593.8	614.7	627.1	640.7	632.7	
7548	599.1	605.3	615.7	630.9	633.3	639.9	655.2	660.6	675.0	653.1	671.4	673.8	671.4	683.4	678.2	
7549	612.4	614.3	625.5	645.6	646.4	646.9	676.5	670.1	666.5	656.0	668.1	687.2	683.5	703.9	684.7	
7550	575.1	588.6	603.2	611.3	618.0	631.8	641.6	667.6	693.6	636.8	635.2	651.9	652.0	679.5	676.0	
7551	611.0	618.4	629.0	633.5	634.1	639.8	652.4	658.4	675.0	656.3	667.0	682.4	695.1	704.4	687.5	
7552	601.2	615.0	613.3	627.2	626.4	636.8	643.3	635.6	647.1	647.7	664.2	650.3	680.5	671.2	671.2	
7553	536.1	527.6	542.3	543.8	538.7	560.9	562.0	561.5	577.3	567.0	571.1	578.0	577.0	587.1	578.7	
7554	605.3	619.0	629.0	626.6	630.7	639.3	666.9	673.9	682.5	663.6	674.0	702.9	697.0	719.2	693.4	
7555	584.1	605.3	610.6	621.1	622.6	632.8	640.9	646.4	662.4	645.4	654.3	672.5	671.4	674.7	654.4	
7556	582.3	605.3	602.1	602.3	597.7	624.2	637.9	640.9	658.5	642.3	644.6	676.2	668.6	682.0	671.5	
7557	535.0	537.4	549.8	552.8	555.8	565.4	561.3	582.0	592.0	570.7	587.4	599.6	594.0	617.8	587.8	
7558	671.9	687.1	685.7	700.0	684.6	702.3	714.9	718.3	727.5	711.1	723.0	735.4	732.3	753.7	733.5	
Mean		584	595	601	608	606	616	632	636	645	629	636	651	652	666	652
±S.D.		±35	±37	±35	±38	±37	±37	±37	±40	±38	±36	±39	±41	±41	±42	±39

Table A-1 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT¹

RAT: Male Body Weights (grams)

Exposure Level	Animal Number	Week of Study															
		30	31	32	33	34	35	36	37	38	39	40	41	42	43	44-45	46
PPM Control	77-7524	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7455	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7456	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7457	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7458	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7459	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7460	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7461	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7462	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7463	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7464	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7465	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7466	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7467	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7468	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7469	629.1	628.2	632.7	634.8	630.6	630.7	629.9	650.1	637.3	648.8	633.0	626.4	635.7	626.1	601 ^d	
	7470	584.9	583.8	597.2	595.6	598.1	574.7	596.7	600.4	609.7	603.6	608.2	598.8	590.3	593.2	575	
	7471	727.4	734.8	738.2	744.2	735.3	747.0	739.4	740.6	749.0	740.0	758.5	---	Dead	---	---	
	7472	630.9	639.9	645.8	650.6	647.8	642.0	642.3	650.5	649.7	649.6	654.2	623.5	624.6	613.0	597	
	7473	581.5	588.7	601.3	611.6	596.4	596.9	602.0	601.3	590.4	599.1	599.1	591.2	584.6	591.2	5606	
	7474	662.8	667.1	677.4	677.3	674.4	651.3	663.3	660.4	669.7	673.3	667.4	644.5	639.1	647.4	618	
	7475	614.6	610.8	616.1	620.9	606.9	598.1	602.5	613.9	601.5	597.1	589.5	584.2	583.2	572.2	520	
	7476	570.4	568.5	584.1	584.4	581.2	571.8	579.4	591.1	595.6	594.8	586.6	573.4	579.7	576.2	558	
	7477	791.4	783.4	804.7	807.9	797.7	766.6	773.1	774.5	769.8	778.1	768.8	---	Dead	---	---	
	7478	620.5	635.7	641.4	639.7	636.4	634.8	644.2	649.0	649.3	653.1	647.3	638.4	641.3	639.5	624	
	7479	657.2	668.1	672.0	673.1	672.3	657.7	669.0	667.8	675.1	672.5	672.0	651.1	652.7	647.2	619	
	7480	612.1	604.4	625.7	620.5	618.2	609.7	608.4	622.3	614.6	627.0	629.3	598.5	604.6	611.1	596	
	7481	664.6	651.0	657.6	671.9	650.2	643.1	654.2	651.4	661.3	669.4	664.8	634.4	632.4	631.7	601	
	7482	646.3	654.5	653.4	646.8	638.2	629.0	634.6	654.8	659.3	659.6	639.8	633.5	644.8	638.1	619	
	7483	679.5	685.0	692.6	691.6	691.9	692.3	692.0	719.0	708.9	711.3	718.3	685.6	680.6	687.7	661	
	7484	624.5	626.3	636.8	641.8	631.5	639.6	632.9	664.5	641.0	648.6	642.6	623.2	630.9	643.5	618	
	7485	712.0	722.4	728.4	742.0	739.1	733.0	738.5	742.6	747.7	742.4	741.3	731.0	735.2	727.5	712	
	7486	688.3	687.2	703.9	697.5	711.1	698.5	711.4	708.7	690.7	696.2	696.0	598.7	664.1	673.4	654	
	7487	566.5	566.8	558.0	548.8	543.5	513.7	454.9	---	Dead	---	---	---	---	---	---	
	7488	594.8	598.1	595.2	616.7	606.8	605.8	612.2	604.5	613.9	616.1	609.9	600.5	600.9	599.0	580	
Mean		643	645	653	656	650	642	644	661	660	662	659	626	631	630	607	
±S.D.		±57	±57	±59	±60	±61	±62	±69	±53	±54	±53	±55	±39	±40	±41	±44	
0.1	77-7524	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7525	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7526	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7527	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7528	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7529	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7530	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7531	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7532	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7533	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7534	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7535	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7536	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7537	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7538	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7539	686.3	683.1	691.7	680.6	674.6	674.3	675.7	690.6	687.1	694.7	701.9	667.4	679.4	691.2	665 ^d	
	7540	673.0	679.4	693.3	702.5	699.3	692.8	698.0	710.8	707.1	707.5	718.3	694.4	696.5	703.9	675	
	7541	635.7	645.1	646.5	644.4	651.4	651.4	652.2	659.4	661.3	674.6	672.6	657.7	654.9	659.5	636	
	7542	581.6	582.0	585.3	585.9	586.1	589.6	596.9	591.1	592.6	600.4	600.6	590.3	598.3	601.2	579	
	7543	660.6	654.7	666.6	666.6	671.7	675.4	654.9	672.0	683.8	681.4	688.7	670.8	674.0	672.8	633	
	7544	634.5	641.9	647.3	643.7	641.3	633.1	633.8	650.5	650.7	647.4	645.7	636.3	647.4	629.8	602	
	7545	663.0	658.3	661.5	678.8	672.9	663.1	669.4	681.6	678.1	682.6	682.5	682.7	683.2	679.6	649	
	7546	645.5	638.9	643.3	643.3	644.6	644.3	653.0	667.4	662.3	666.9	670.1	657.7	660.0	665.1	642	
	7547	641.0	641.2	651.26	641.2	648.7	656.2	659.1	665.4	665.4	668.0	662.9	661.6	655.0	650.4	642	
	7548	683.5	684.6	695.2	678.3	673.1	677.5	682.6	707.3	698.2	707.8	703.8	688.0	709.8	703.5	609	
	7549	691.6	690.9	689.3	688.9	679.2	670.5	689.4	706.3	706.7	706.3	703.8	687.4	684.7	695.8	656	
	7550	664.1	668.2	672.9	675.3	680.8	668.8	677.3	690.0	681.7	691.5	696.4	662.0	670.9	665.0	640	
	7551	686.1	685.8	711.0	709.4	714.3	706.2	699.9	708.7	718.8	701.3	709.5	696.9	701.1	705.5	682	
	7552	669.2	666.7	665.0	663.5	665.8	658.3	665.2	697.1	675.0	676.0	677.6	659.8	658.4	661.4	637	
	7553	598.4	590.8	588.7	588.3	583.3	592.5	597.4	633.5	615.2	619.7	616.7	610.1	606.7	606.5	576	
	7554	709.9	707.3	722.4	731.9	725.2	724.5	732.6	748.0	745.0	750.7	745.7	736.3	743.0	752.5	717	
	7555	666.0	669.8	683.5	698.1	686.5	690.2	691.5	700.0	696.5	712.7	711.8	685.3	717.9	723.2	660	
	7556	672.4	673.6	683.7	687.4	684.2	693.4	697.0	696.5	708.0	716.2	724.6	701.7	716.5	628.9	693	
	7557	596.8	606.6	623.7	618.3	631.8	626.5	625.7	632.6	639.2	648.0	640.5	618.2	628.6	747.2	622	
	7557	731.3	740.0	749.2	746.8	744.7	729.8	740.0	736.7	752.6	755.1	757.1	739.3	734.7	690.5	Dead	
Mean		660	660	669	669	668	666	670	682	681	685	686	670	676	677	646	
±S.D.		±38	±38	±40	±42	±40	±37	±38	±37	±39	±38	±40	±38	±39	±41	±36	

Table A-1 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT¹

Rat: Male Body Weights (grams)

Exposure Level	Animal Number	Week of Study															
ppm		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	
1.0	77-7593	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7594	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7595	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7596	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7597	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7598	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7599	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7600	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7601	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7602	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7603	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7604	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7605	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7606	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7607	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7608	564.1	566.7	566.8	592.0	578.5	584.3	596.9	590.9	610.8	592.3	606.8	616.3	627.8	642.5	615.8	
	7609	518.3	527.6	537.4	548.0	544.9	547.8	543.9	555.6	571.1	553.3	565.6	574.5	581.8	578.1	560.9	
	7610	536.0	544.2	545.1	547.7	537.2	536.5	553.2	542.7	554.2	547.9	553.0	573.4	573.4	576.7	567.6	
	7611	475.0	487.6	491.9	505.4	490.1	507.7	520.0	518.0	525.1	516.3	528.5	542.1	547.4	548.0	523.3	
	7612	577.2	586.9	590.9	591.8	592.3	602.3	617.4	631.3	637.6	617.7	633.3	652.8	671.6	664.2	644.8	
	7613	617.5	618.2	623.7	632.9	627.4	640.1	655.2	662.1	683.1	586.9	657.9	686.3	682.1	720.3	693.2	
	7614	560.9	579.0	573.9	578.5	572.0	576.3	591.1	596.0	605.1	589.0	588.3	618.5	611.1	619.2	616.7	
	7615	536.9	548.1	548.6	553.0	554.2	566.6	579.9	575.9	577.4	566.1	586.4	604.1	612.0	611.4	611.4	
	7616	554.2	559.7	567.5	566.7	573.4	576.1	589.6	598.7	601.2	581.7	599.3	610.9	606.1	627.5	610.2	
	7617	643.6	659.6	657.6	672.2	668.8	675.6	687.5	709.1	717.3	688.4	707.1	707.5	731.2	731.5	675.9	
	7618	574.3	596.2	589.6	605.2	605.8	602.6	624.2	623.2	640.8	611.7	636.3	642.6	640.3	655.0	631.8	
	7619	499.6	509.7	509.2	509.9	510.0	502.0	508.3	508.6	501.3	422.7	492.5	488.4	494.7	497.3	495.6	
	7620	556.3	566.6	564.8	572.5	566.1	572.1	576.0	585.7	594.8	577.7	592.8	614.3	622.2	628.3	618.0	
	7621	615.6	635.6	617.4	627.1	628.8	640.8	650.5	646.3	662.6	636.6	645.5	669.6	673.3	691.5	668.5	
	7622	623.4	633.0	633.8	629.1	636.3	644.3	666.1	666.8	679.4	666.6	678.2	695.4	696.8	710.0	689.8	
	7623	539.2	552.3	554.6	556.3	557.6	565.2	579.5	587.4	600.1	584.4	592.9	603.1	610.5	623.4	612.0	
	7624	656.9	671.0	683.5	698.2	673.5	681.1	701.3	714.6	727.6	678.2	707.7	729.3	739.0	746.9	702.1	
	7625	583.8	603.6	607.7	622.8	616.8	636.8	635.9	640.0	657.6	627.5	646.2	656.3	662.3	664.0	656.4	
	7626	576.3	579.7	585.2	581.5	591.3	606.6	612.1	609.7	618.3	609.5	619.8	637.8	620.3	650.4	639.6	
	7627	561.3	578.0	574.6	590.6	579.4	586.3	601.6	603.0	608.7	591.9	609.6	619.0	624.4	631.2	609.0	
	Mean	568	580	581	589	585	593	604	608	619	592	612	627	631	641	622	
	S.D.	±46	±48	±47	±49	±48	±50	±52	±56	±59	±59	±55	±57	±59	±62	±54	
10	77-7663	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7664	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7665	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7666	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7667	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7668	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7669	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7670	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7671	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7672	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7673	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7674	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7675	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7676	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7677	Sacrificed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	7678	636.2	636.4	636.2	644.7	630.7	639.8	665.3	667.1	680.2	653.1	677.0	691.1	692.3	710.5	709.2	
	7679	566.2	574.0	583.3	597.7	583.0	588.8	606.6	625.8	631.0	601.2	622.7	637.4	688.6	660.6	645.0	
	7680	567.4	573.2	581.8	595.3	574.6	598.9	619.4	629.2	638.9	616.4	622.1	641.2	653.8	660.1	629.9	
	7681	611.9	630.3	634.1	631.5	632.7	633.5	642.8	657.5	670.2	652.1	657.8	675.5	677.1	689.6	678.2	
	7682	574.5	597.2	611.4	616.1	607.1	611.6	615.6	624.6	637.8	599.9	618.4	636.5	647.1	657.7	641.2	
	7683	567.5	584.3	595.7	593.7	601.0	599.0	615.1	628.5	643.4	628.0	630.6	651.8	659.1	675.1	658.2	
	7684	548.5	559.6	569.5	575.7	562.3	570.0	586.9	603.0	612.9	589.0	601.1	624.8	629.5	633.6	621.1	
	7685	577.5	589.2	599.2	608.2	592.4	600.4	624.0	619.2	623.8	604.4	624.1	634.3	647.0	651.5	658.4	
	7686	557.9	558.9	562.9	569.8	562.5	572.9	586.0	583.2	606.4	573.4	594.4	605.9	614.4	622.1	619.3	
	7687	573.5	577.7	589.8	589.9	581.1	600.1	597.6	610.1	630.3	604.4	618.9	639.5	631.9	650.9	634.3	
	7688	554.5	571.4	588.2	596.2	585.6	600.2	599.1	600.0	620.1	592.4	603.2	606.0	617.4	622.2	608.6	
	7689	574.9	585.0	589.8	609.5	595.0	604.4	608.7	620.3	632.9	604.4	625.2	634.1	634.8	656.0	642.6	
	7690	549.7	556.0	546.6	561.6	563.4	561.9	570.5	576.6	590.6	562.2	580.7	600.8	605.5	609.7	632.7	
	7691	619.9	607.7	629.3	634.7	629.0	649.2	656.1	671.9	677.0	666.9	672.4	696.0	697.2	712.7	615.4	
	7692	624.6	640.5	652.7	650.4	665.7	669.5	681.6	700.5	709.1	690.2	698.3	718.3	713.1	729.9	717.2	
	7693	478.2	496.8	495.4	503.8	506.9	505.9	516.4	543.0	554.2	543.2	537.4	558.9	561.1	567.7	564.2	
	7694	517.0	519.7	523.3	531.2	531.4	536.2	556.6	546.9	558.5	547.7	553.5	562.0	563.1	572.8	554.9	
	7695	622.2	635.2	645.4	641.0	641.1	654.1	661.3	660.8	676.2	649.6	671.7	686.5	681.1	694.4	679.4	
	7696	579.5	592.9	606.4	612.2	607.5	616.0	621.6	626.4	637.7	619.6	647.4	650.0	667.0	666.3	650.8	
	7697	528.0	516.2	532.6	544.5	558.7	561.9	566.5	579.8	587.3	561.7	579.5	591.9	622.1	600.5	579.2	
	Mean	572	580	589	596	591	599	610	619	631	608	622	637	645	652	637	
	S.D.	±39	±40	±42	±39	±38	±40	±40	±41	±40	±40	±42	±43	±41	±44	±42	

TABLE A-3

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 2
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-imp Loss	$\bar{A}$ Post-imp Loss
77-7469	1019	1501	15	15	2	0	6
		1502	14	14	0		
7470	1021	1503	non-pregnant			0	0
		1504	14	14	0		
7471	1022	1505	16	16	2	0	16
		1506	16	16	3		
7472	1023	1507	14	14	0	3	0
		1508	16	15	0		
7473	1024	1509	19	17	3	10	18
		1510	non-pregnant				
7474	1025	1511	17	17	1	0	16
		1512	12	12	3		
7475	1026	1513	15	15	0	0	3
		1514	16	16	1		
7476	1027	1515	non-pregnant			0	0
		1516	15	16	0		
7477	1028	1517	16	15	0	6	0
		1518	non-pregnant				
7478	1029	1519	14	1	— ^a	46	0
		1520	13	15	0		
7479	1030	1521	12	14	2	12	22
		1522	17	13	4		
7480	1032	1523	18	15	2	16	16
		1524	13	11	2		
7481	1033	1525	non-pregnant			7	0
		1526	15	14	0		
7482	1034	1527	14	15	1	4	4
		1528	13	13	0		
7483	1035	1529	12	12	1	0	12
		1530	11	12	2		
7484	1036	1531	13	11	1	15	9
		1532	non-pregnant				
7485	1037	1533	non-pregnant			21	27
		1534	14	11	3		
7486	1182	1535	16	15	3	16	18
		1536	16	12	2		
7487	1039	1537	16	15	0	3	0
		1538	12	12	0		
7488	1040	1539	18	18	0	12	0
		1540	16	12	0		
Mean ± S.D.			15±2	14±2	1.1±1.2	8±11	8±9

Total fertile males = 20

Total fertile males impregnating two females = 13

TABLE A-3 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 2
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7539	1057	1541	15	15	1	0	7
		1542	non-pregnant				
7540	1058	1543	16	16	0	3	6
		1544	16	15	2		
7541	1059	1545	non-pregnant			0	8
		1546	13	13	1		
7542	1060	1547	non-pregnant			0	6
		1548	16	16	1		
7543	1062	1549	killed, animal out of water				
		1550	killed, animal out of water				
7544	1063	1551	non-pregnant			0	14
		1552	14	14	2		
7545	1064	1553	13	13	0	0	0
		1554	13	13	0		
7546	1065	1555	killed, animal out of water				
		1556	killed, animal out of water				
7547	1066	1557	13	13	1	0	4
		1558	11	11	0		
7548	1068	1559	15	15	2	0	13
		1560	non-pregnant				
7549	1069	1561	12	12	0	0	4
		1562	13	15	1		
7550	1070	1563	13	13	1	0	4
		1564	12	13	0		
7551	1072	1565	non-pregnant			0	15
		1566	12	13	2		
7552	1073	1567	14	13	0	7	0
		1568	non-pregnant				
7553	1074	1569	13	14	1	0	7
		1570	non-pregnant				
7554	1075	1571	15	16	1	0	3
		1572	11	13	0		
7698	1175	1573	16	13	1	16	8
		1574	15	13	1		
7555	1077	1500	11	11	1	0	9
		1576	non-pregnant				
7556	1078	1577	14	14	1	0	7
		1578	non-pregnant				
7557	1181	1579	16	16	1	4	3
		1580	15	14	0		
Mean ± S.D.			14±2	14±1	0.9±0.6	2±4	6±4

Total fertile males = 18

Total fertile males impregnating two females = 8

TABLE A-3 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 2
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	1581	16	16	0	0	0
		1582	17	17	0		
7609	1098	1583	18	18	1	0	6
		1584	non-pregnant				
7610	1099	1585	13	13	1	0	10
		1586	18	18	2		
7611	1100	1587	15	14	1	7	7
		1588	non-pregnant				
7612	1101	1589	13	12	0	4	4
		1590	13	13	1		
7613	1102	1591	killed, animal out of water				
		1592	killed, animal out of water				
7614	1103	1593	18	18	0	4	0
		1594	13	12	0		
7615	1104	1595	12	12	0	0	12
		1596	13	13	3		
7616	1105	1597	17	17	0	0	0
		1598	non-pregnant				
7617	1106	1599	14	8	1	22	10
		1600	11	13	1		
7618	1107	1601	17	17	1	0	6
		1602	non-pregnant				
7619	1110	1603	non-pregnant				
		1604	non-pregnant				
7620	1111	1605	non-pregnant			32	0
		1606	19	13	0		
7621	1112	1607	12	4	0	67	0
		1608	non-pregnant				
7622	1113	1609	non-pregnant			0	0
		1610	15	17	0		
7623	1114	1611	15	7	0	26	0
		1612	13	14	0		
7624	1115	1613	11	1	1	49	50
		1614	15	14	0		
7625	1116	1615	12	12	1	0	8
		1616	non-pregnant				
7626	1117	1617	10	5	3	40	39
		1618	16	11	2		
7627	1118	1619	15	15	0	0	0
		1620	15	15	0		
Mean $\pm$ S.D.			15 $\pm$ 2	13 $\pm$ 4	0.6 $\pm$ 0.7	16 $\pm$ 22	8 $\pm$ 14

Total fertile males = 18

Total fertile males impregnating two females = 10

TABLE A-3 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 2
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7678	1136	1621	16	15	0	6	0
		1622	non-pregnant				
7679	1137	1623	13	13	1	0	8
		1624	non-pregnant				
7680	1138	1625	14	16	4	0	25
		1626	16	16	4		
7681	1139	1627	17	14	2	18	14
		1628	non-pregnant				
7682	1140	1629	11	11	2	0	13
		1630	12	13	1		
7683	1141	1631	13	11	2	8	9
		1632	13	13	0		
7684	1142	1633	non-pregnant			14	0
		1634	14	12	0		
7685	1143	1635	10	10	0	0	4
		1636	15	15	1		
7686	1144	1637	12	12	0	0	0
		1638	non-pregnant				
7687	1145	1639	17	17	0	0	0
		1640	14	14	0		
7688	1146	1641	15	15	1	4	14
		1642	15	14	3		
7689	1147	1643	16	16	0	4	10
		1644	15	14	3		
7690	1148	1645	16	16	0	12	4
		1646	17	13	1		
7691	1149	1647	12	10	0	19	0
		1648	14	11	0		
7692	1150	1649	non-pregnant				
		1650	non-pregnant				
7693	1151	1651	15	14	0	4	3
		1652	18	18	1		
7694	1152	1653	non-pregnant			0	12
		1654	17	17	2		
7695	1153	1655	11	11	0	21	7
		1656	12	7	1		
7696	1154	1657	16	16	0	9	4
		1658	17	14	1		
7697	1155	1659	non-pregnant			9	20
		1660	11	10	2		
Mean $\pm$ S.D.			14 $\pm$ 2	13 $\pm$ 2	1.0 $\pm$ 1.0	7 $\pm$ 7	8 $\pm$ 7

Total fertile males = 19

Total fertile males impregnating two females = 12

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 2nd week of the study.

^aData inadvertently were not recorded.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-4

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 4
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-imp Loss	$\bar{A}$ Post-imp Loss
77-7469	1019	1661	13	12	1	12	8
		1662	18	15	1		
7470	1021	1663	13	13	2	8	12
		1664	13	11	1		
7471	1022	1665	15	14	1	4	4
		1666	16	16	0		
7472	1023	1667	15	11	0	14	0
		1668	16	16	0		
7473	1024	1669	non-pregnant			10	0
		1670	19	17	0		
7474	1025	1671	14	14	1	0	4
		1672	16	18	0		
7475	1026	1673	19	15	0	16	0
		1674	20	18	0		
7476	1027	1675	13	5	0	37	7
		1676	16	14	2		
7477	1028	1677	15	15	0	0	0
		1678	12	12	0		
7478	1029	1679	non-pregnant			17	7
		1680	18	15	1		
7479	1030	1681	12	14	0	14	4
		1682	17	12	1		
7480	1032	1683	13	14	0	0	0
		1684	non-pregnant				
7481	1033	1685	12	5	0	58	0
		1686	non-pregnant				
7482	1034	1687	16	12	2	19	12
		1688	15	13	1		
7483	1035	1689	15	15	0	0	0
		1690	14	15	0		
7484	1036	1691	14	14	0	6	4
		1692	15	13	1		
7485	1037	1693	13	9	0	31	0
		1694	non-pregnant				
7486	1182	1695	18	16	1	12	7
		1696	15	13	1		
7487	1039	1697	15	15	1	0	10
		1698	14	14	2		
7488	1040	1699	16	14	0	6	4
		1700	12	12	1		
Mean $\pm$ S.D.			15 $\pm$ 2	13 $\pm$ 3	0.6 $\pm$ 0.6	13 $\pm$ 14	4 $\pm$ 4

Total fertile males = 20

Total fertile males impregnating two females = 15

TABLE A-4 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 4
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7539	1057	1701	18	18	0	0	0
		1702	non-pregnant				
7540	1058	1703	non-pregnant				
		1704	non-pregnant				
7541	1059	1705	16	17	0	14	5
		1706	14	10	1		
7542	1060	1707	12	12	2	0	17
		1708	non-pregnant				
7543	1062	1709	16	12	0	16	3
		1710	17	16	1		
7544	1063	1711	14	13	0	4	0
		1712	13	13	0		
7545	1064	1713	13	12	0	10	4
		1714	15	13	1		
7546	1065	1715	non-pregnant			62	0
		1716	13	5	0		
7547	1066	1717	17	18	0	0	0
		1718	16	16	0		
7548	1068	1719	14	14	0	14	8
		1720	18	13	2		
7549	1069	1721	15	14	2	13	7
		1722	21	17	0		
7550	1070	1723	14	14	0	0	0
		1724	15	15	0		
7551	1072	1725	non-pregnant			0	6
		1726	16	16	1		
7552	1073	1727	13	13	0	4	4
		1728	15	14	1		
7553	1074	1729	15	14	1	4	7
		1730	15	15	1		
7554	1075	1731	16	16	4	6	16
		1732	16	14	1		
7698	1175	1733	14	11	2	21	18
		1734	non-pregnant				
7555	1077	1735	14	8	7	32	44
		1736	18	14	0		
7556	1078	1737	15	16	0	0	4
		1738	12	13	1		
7557	1181	1739	13	16	2	4	10
		1740	15	14	1		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 3	0.9 $\pm$ 1.0	11 $\pm$ 15	8 $\pm$ 10

Total fertile males = 19

Total fertile males impregnating two females = 14

TABLE A-4 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 4
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	1741	non-pregnant			0	18
		1742	17	17	3		
7609	1098	1743	14	11	1	40	42
		1744	19	8	6		
7610	1099	1745	15	16	1	0	3
		1746	14	15	0		
7611	1100	1747	18	17	0	3	6
		1748	14	15	2		
7612	1101	1749	non-pregnant			0	12
		1750	16	16	2		
7613	1102	1751	15	14	0	7	0
		1752	non-pregnant				
7614	1103	1756	15	15	1	0	4
		1757	12	13	0		
7615	1104	1758	non-pregnant				
		1759	non-pregnant				
7616	1105	1760	12	16	2	0	10
		1761	14	14	1		
7617	1106	1762	16	15	0	6	0
		1763	non-pregnant				
7618	1107	1764	13	12	1	10	4
		1765	18	16	0		
7619	1110	1753	13	13	0	3	4
		1754	16	15	1		
7620	1111	1766	non-pregnant			12	0
		1767	16	14	0		
7621	1112	1768	non-pregnant			0	0
		1769	14	14	0		
7622	1113	1770	15	13	0	13	0
		1771	non-pregnant				
7623	1114	1772	non-pregnant			7	7
		1773	15	14	1		
7624	1115	1774	14	14	1	0	7
		1775	non-pregnant				
7625	1116	1776	15	16	1	0	6
		1777	non-pregnant				
7626	1117	1778	16	18	2	3	6
		1779	17	16	0		
7627	1118	1780	11	15	1	0	7
		1781	14	15	1		
Mean $\pm$ S.D.			15 $\pm$ 1	15 $\pm$ 2	0.9 $\pm$ 1.0	5 $\pm$ 9	7 $\pm$ 10

Total fertile males = 19

Total fertile males impregnating two females = 9

TABLE A-4 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 4
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7678	1136	1782	11	9	0	9	0
		1783	15	15	0		
7679	1137	1784	non-pregnant			21	9
		1785	14	11	1		
7680	1138	1786	20	16	1	10	7
		1787	12	12	1		
7681	1139	1788	non-pregnant			70	0
		1789	10	3	0		
7682	1140	1790	17	16	7	3	22
		1791	16	16	0		
7683	1141	1792	non-pregnant			0	0
		1793	14	14	0		
7684	1142	1794	13	12	1	16	20
		1795	16	12	4		
7685	1143	1796	15	12	3	24	22
		1797	15	11	2		
7686	1144	1798	19	14	1	26	7
		1799	non-pregnant				
7687	1145	1800	13	13	3	0	18
		1801	13	14	2		
7688	1146	1802	non-pregnant				
		1803	non-pregnant				
7689	1147	1804	non-pregnant			15	9
		1805	13	11	1		
7690	1148	1806	14	15	1	0	14
		1807	13	14	3		
7691	1149	1808	19	15	2	21	13
		1809	non-pregnant				
7692	1150	1810	15	15	6	0	40
		1811	non-pregnant				
7693	1151	1812	13	13	2	0	15
		1813	non-pregnant				
7694	1152	1814	18	13	2	17	14
		1815	18	17	2		
7695	1153	1816	14	11	0	10	6
		1817	15	16	2		
7696	1154	1818	14	14	3	4	10
		1819	14	13	0		
7697	1155	1820	11	11	0	19	0
		1821	13	8	0		
Mean ± S.D.			14±2	13±3	1.6±1.4	14±16	12±10

Total fertile males = 19

Total fertile males impregnating two females = 11

†Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 4th week of the study.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-5

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 7
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	801	17	16	1	6	10
		802	16	15	2		
7470	1021	803	17	19	1	4	2
		804	15	14	0		
7471	1022	805	14	14	0	0	0
		806	non-pregnant				
7472	1023	807	15	16	3	4	10
		808	12	11	0		
7473	1024	809	12	15	3	6	14
		810	15	13	1		
7474	1025	811	17	15	0	12	0
		812	non-pregnant				
7475	1026	813	14	13	2	4	14
		814	13	15	2		
7476	1027	815	non-pregnant			0	6
		816	17	17	1		
7477	1028	817	non-pregnant			0	6
		818	16	16	1		
7478	1029	819	non-pregnant			6	7
		820	16	15	1		
7479	1030	821	14	12	0	11	0
		822	13	12	0		
7480	1032	823	non-pregnant			24	15
		824	17	13	2		
7481	1033	825	14	13	1	4	4
		826	17	17	0		
7482	1034	827	16	13	3	19	23
		828	non-pregnant				
7483	1035	829	15	15	4	22	14
		830	16	9	0		
7484	1036	831	15	15	0	0	4
		832	15	15	1		
7485	1037	833	16	13	1	10	4
		834	14	17	0		
7486	1182	835	15	15	1	0	4
		836	16	17	0		
7487	1039	837	14	15	1	3	4
		838	18	17	0		
7488	1040	839	18	18	3	0	8
		840	15	15	0		
Mean $\pm$ S.D.			16 $\pm$ 1	15 $\pm$ 1	1.1 $\pm$ 0.8	7 $\pm$ 7	7 $\pm$ 6

Total fertile males = 20

Total fertile males impregnating two females = 13

TABLE A-5 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated With DBCP-Exposed Males

Week of Study: 7
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-imp Loss	$\bar{A}$ Post-imp Loss
77-7539	1057	841	17	15	2	12	13
		842	non-pregnant				
7540	1058	843	16	12	1	12	4
		844	15	17	0		
7541	1059	845	17	12	2	29	17
		846	non-pregnant				
7542	1060	847	15	16	0	0	0
		848	non-pregnant				
7543	1062	849	16	14	0	22	8
		850	18	12	2		
7544	1063	851	14	15	2	4	10
		852	14	13	1		
7545	1064	853	14	14	3	0	14
		854	14	16	1		
7546	1065	855	15	15	3	0	10
		856	14	14	0		
7547	1066	857	15	17	1	0	3
		858	14	15	0		
7548	1068	859	12	7	4	42	57
		860	non-pregnant				
7549	1069	861	14	14	1	0	4
		862	12	14	0		
7550	1070	863	non-pregnant				
		864	non-pregnant				
7551	1072	865	16	16	0	3	0
		866	16	15	0		
7552	1073	867	17	17	1	0	6
		868	15	15	1		
7553	1074	869	non-pregnant			14	8
		870	14	12	1		
7554	1075	871	non-pregnant			0	6
		872	14	16	1		
7698	1175	873	16	15	1	3	7
		874	14	15	1		
7555	1077	875	14	12	2	10	12
		876	14	13	1		
7556	1078	877	non-pregnant			7	0
		878	15	14	0		
7557	1181	879	16	17	2	28	14
		880	14	6	1		
Mean $\pm$ S.D.			15 $\pm$ 1	14 $\pm$ 2	1.2 $\pm$ 0.9	10 $\pm$ 12	10 $\pm$ 12

Total fertile males = 19

Total fertile males impregnating two females = 12

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TABLE A-5 (C ntinued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 7
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7608	1097	881	non-pregnant			15	18
		882	13	11	2		
7609	1098	883	16	15	0	6	0
		884	non-pregnant				
7610	1099	885	17	17	0	0	0
		886	non-pregnant				
7611	1100	887	17	17	0	4	4
		888	15	14	1		
7612	1101	889	16	16	0	9	4
		890	17	14	1		
7613	1102	891	16	16	0	34	10
		892	16	5	1		
7614	1103	893	12	14	0	8	0
		894	13	11	0		
7615	1104	895	non-pregnant			6	0
		896	16	15	0		
7616	1105	897	13	13	0	0	10
		898	16	16	3		
7617	1106	899	16	14	2	6	7
		901	12	14	0		
7618	1107	902	16	15	2	10	10
		903	14	12	1		
7619	1110	904	16	9	2	44	22
		905	non-pregnant				
7620	1111	906	20	19	3	5	16
		907	non-pregnant				
7621	1112	908	13	15	0	0	0
		909	non-pregnant				
7622	1113	910	13	13	1	10	4
		911	15	12	0		
7623	1114	912	15	13	0	6	10
		913	12	14	3		
7624	1115	914	15	15	2	0	6
		915	14	15	0		
7625	1116	916	non-pregnant				
		917	non-pregnant				
7626	1117	918	17	16	0	8	0
		919	18	16	0		
7627	1118	920	16	9	4	22	22
		921	16	16	0		
Mean ± S.D.			15±2	14±2	0.9±0.9	10±12	8±7

Total fertile male = 19

Total fertile males impregnating two females = 12

TABLE A-5 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 7
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7678	1136	922	17	13	1	22	12
		923	15	12	2		
7679	1137	924	13	13	0	10	12
		925	15	12	3		
7680	1138	926	14	12	1	25	20
		927	14	9	3		
7681	1139	928	17	16	2	3	20
		929	15	15	4		
7682	1140	930	non-pregnant			0	27
		931	15	15	4		
7683	1141	932	14	13	3	4	19
		933	13	13	2		
7684	1142	934	12	13	0	14	14
		935	15	11	3		
7685	1143	936	13	11	0	26	11
		937	14	9	2		
7686	1144	938	16	13	3	19	23
		939	non-pregnant				
7687	1145	940	18	13	6	14	34
		941	14	14	3		
7688	1146	942	12	13	5	0	38
		943	non-pregnant				
7689	1147	944	13	14	5	38	18
		945	12	3	0		
7690	1148	946	17	15	2	6	14
		947	19	19	3		
7691	1149	948	9	13	4	0	26
		949	13	14	3		
7692	1150	950	14	16	3	0	14
		951	13	13	1		
7693	1151	952	non-pregnant				
		953	non-pregnant				
7694	1152	954	14	10	4	18	34
		955	12	11	3		
7695	1153	956	16	11	4	25	18
		957	16	13	0		
7696	1154	958	non-pregnant			8	17
		959	13	12	2		
7697	1155	960	non-pregnant				
		961	non-pregnant				
Mean $\pm$ S.D.			14 $\pm$ 2	13 $\pm$ 2	2.6 $\pm$ 1.1	13 $\pm$ 11	21 $\pm$ 8

Total fertile males = 18

Total fertile males impregnating two females = 14

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 7th week of the study.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-6

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 10
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	1825	10	9	0	10	0
		1826	non-pregnant				
7470	1021	1827	15	16	0	3	4
		1828	16	15	1		
7471	1022	1829	non-pregnant			0	8
		1830	13	13	1		
7472	1023	1831	15	15	4	6	14
		1832	16	14	0		
7473	1024	1833	12	10	1	8	5
		1834	13	13	0		
7474	1025	1835	14	14	0	14	0
		1836	14	10	0		
7475	1026	1837	14	13	1	4	8
		1838	15	15	1		
7476	1027	1839	15	13	1	10	4
		1840	12	1	0		
7477	1028	1841	16	14	0	12	4
		1842	15	13	1		
7478	1029	1843	15	16	2	0	6
		1844	13	13	0		
7479	1030	1845	13	13	0	10	8
		1846	16	13	2		
7480	1032	1847	non-pregnant			11	6
		1848	18	16	1		
7481	1033	1849	16	15	0	3	4
		1850	13	13	1		
7482	1034	1851	non-pregnant				
		1852	non-pregnant				
7483	1035	1853	12	12	0	0	3
		1854	17	18	1		
7484	1036	1855	15	15	0	0	4
		1856	11	11	1		
7485	1037	1857	16	15	0	6	0
		1858	non-pregnant				
7486	1182	1859	12	12	1	0	8
		1860	non-pregnant				
7487	1039	1861	10	10	1	0	5
		1862	14	14	0		
7488	1040	1863	non-pregnant			45	0
		1864	11	6	0		
Mean ± S.D.			14±2	13±3	0.6±0.5	7±10	5±4

Total fertile males = 19

Total fertile males impregnating two females = 13

TABLE A-6 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 10
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7539	1057	1865	17	14	1	12	11
		1866	14	13	2		
7540	1058	1867	17	16	1	3	6
		1868	14	14	1		
7541	1059	1869	13	12	1	4	4
		1870	14	14	0		
7542	1060	1871	20	10	1	43	5
		1872	25	16	0		
7543	1062	1873	non-pregnant				
		1874	non-pregnant				
7544	1063	1875	14	14	1	0	8
		1876	13	13	1		
7545	1064	1877	15	15	2	0	6
		1878	12	12	0		
7546	1065	1879	14	12	1	10	4
		1880	15	14	0		
7547	1066	1881	16	14	0	6	4
		1882	12	15	1		
7548	1068	1883	16	15	2	28	6
		1884	8	4	0		
7549	1069	1885	16	14	0	10	0
		1886	15	14	0		
7550	1070	1887	17	17	1	0	7
		1888	13	13	1		
7551	1072	1889	14	13	0	4	0
		1890	13	13	0		
7552	1073	1891	15	14	0	4	0
		1892	18	18	0		
7553	1074	1893	non-pregnant			0	7
		1894	14	14	1		
7554	1075	1895	15	15	0	0	10
		1896	14	14	3		
7698	1175	1897	15	13	0	6	0
		1898	11	14	0		
7555	1077	1899	16	14	0	6	6
		1900	15	15	2		
7556	1078	1901	13	14	2	0	7
		1902	15	17	0		
7557	1181	1903	non-pregnant			0	6
		1904	16	16	1		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 1	0.7 $\pm$ 0.5	7 $\pm$ 11	5 $\pm$ 3

Total fertile males = 19

Total fertile males impregnating two females = 17

TABLE A-6 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 10
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	1905	16	17	0	0	0
		1906	non-pregnant				
7609	1098	1907	25	13	2	48	15
		1908	non-pregnant				
7610	1099	1909	13	11	0	14	6
		1911	17	15	2		
7611	1100	1912	15	14	0	6	4
		1913	16	15	1		
7612	1101	1914	16	9	0	22	0
		1915	12	13	0		
7613	1102	1916	13	12	1	14	8
		1917	16	13	1		
7614	1103	1918	16	14	0	34	28
		1919	20	9	5		
7615	1104	1920	non-pregnant				
		1921	non-pregnant				
7616	1105	1922	17	18	0	0	0
		1923	16	16	0		
7617	1106	1924	14	14	0	3	0
		1925	17	16	0		
7618	1107	1926	13	15	2	39	6
		1927	14	3	0		
7619	1110	1928	15	12	0	20	0
		1929	non-pregnant				
7620	1111	1930	15	14	0	4	0
		1931	13	14	0		
7621	1112	1932	18	16	0	6	0
		1933	16	16	0		
7622	1113	1934	14	14	2	0	11
		1935	11	12	1		
7623	1114	1936	11	13	0	0	0
		1937	17	17	0		
7624	1115	1938	17	16	2	6	12
		1939	non-pregnant				
7625	1116	1940	10	11	0	4	4
		1941	12	11	1		
7626	1117	1942	11	12	2	0	12
		1943	12	12	1		
7627	1118	1944	non-pregnant				
		1945	non-pregnant				
Mean $\pm$ S.D.			15 $\pm$ 3	13 $\pm$ 2	0.8 $\pm$ 0.8	12 $\pm$ 15	6 $\pm$ 8

Total fertile males = 18

Total fertile males impregnating two females = 14

TABLE A-6 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 10
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7678	1136	1946	15	15	0	4	0
		1947	13	12	0		
7679	1137	1948	14	14	2	14	16
		1949	17	12	2		
7680	1138	1950	16	16	5	0	31
		1951	non-pregnant				
7681	1139	1952	non-pregnant			19	38
		1953	16	13	5		
7682	1140	1954	non-pregnant			0	21
		1955	14	14	3		
7683	1141	1956	14	14	2	16	26
		1957	12	8	3		
7684	1142	1958	non-pregnant			0	28
		1959	13	14	4		
7685	1143	1960	--- ^a	12	3	0	29
		1961	12	12	4		
7686	1144	1962	14	11	2	20	14
		1963	11	9	1		
7687	1145	1964	14	14	2	10	16
		1965	14	11	2		
7688	1146	1966	14	3	1	84	16
		1967	11	1	0		
7689	1147	1968	7	4	4	32	58
		1969	15	12	2		
7690	1148	1970	16	14	2	28	29
		1971	16	9	4		
7691	1149	1972	15	15	3	0	14
		1973	13	13	1		
7692	1150	1974	14	14	1	0	8
		1975	12	12	1		
7693	1151	1976	16	15	6	6	40
		1977	non-pregnant				
7694	1152	1978	--- ^a	13	0	7	16
		1979	14	13	4		
7695	1153	1980	13	5	0	62	0
		1981	non-pregnant				
7696	1154	1982	16	14	2	12	14
		1983	non-pregnant				
7697	1155	1984	20	17	3	8	15
		1985	8	8	1		
Mean ± S.D.			14±2	12±3	2.5±1.6	16±22	21±14

Total fertile males = 20

Total fertile males impregnating two females = 13

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 10th week of the study.

^aData inadvertently were not recorded.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-7

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 12
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	2001	14	11	4	14	18
		2002	14	13	0		
7470	1021	2003	non-pregnant			0	0
		2004	13	16	0		
7471	1022	2005	16	14	0	13	4
		2006	14	12	1		
7472	1023	2007	10	5	0	32	4
		2008	15	13	1		
7473	1024	2009	17	16	1	3	9
		2010	14	16	2		
7474	1025	2011	non-pregnant			24	0
		2012	21	16	0		
7475	1026	2013	18	16	0	6	0
		2014	10	10	0		
7476	1027	2015	non-pregnant			6	0
		2016	18	17	0		
7477	1028	2017	17	13	1	12	4
		2018	17	17	0		
7478	1029	2019	non-pregnant			12	0
		2020	17	15	0		
7479	1030	2021	15	16	1	7	12
		2022	14	12	2		
7480	1032	2023	20	18	2	11	16
		2024	17	15	3		
7481	1033	2025	18	16	1	14	6
		2026	17	14	1		
7482	1034	2027	non-pregnant			43	0
		2028	14	8	0		
7483	1035	2029	13	13	1	10	16
		2030	16	13	3		
7484	1036	2031	16	15	0	3	4
		2032	14	15	1		
7485	1037	2033	15	13	2	10	8
		2034	14	13	0		
7486	1182	2035	14	15	0	18	12
		2036	11	8	2		
7487	1039	2037	13	13	1	0	4
		2038	13	14	0		
7488	1040	2039	12	12	0	10	4
		2040	16	13	1		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 2	0.8 $\pm$ 0.8	12 $\pm$ 10	6 $\pm$ 6

Total fertile males = 20

Total fertile males impregnating two females = 15

TABLE A-7 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 12
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7539	1057	2041	non-pregnant			0	0
		2042	14	15	0		
7540	1058	2043	15	14	1	14	4
		2044	15	12	0		
7541	1059	2045	non-pregnant			23	0
		2046	13	10	0		
7542	1060	2047	22	17	2	18	6
		2048	17	15	0		
7543	1062	2049	17	16	1	6	6
		2050	non-pregnant				
7544	1063	2051	14	17	1	0	10
		2052	14	14	2		
7545	1064	2053	18	17	4	3	16
		2054	14	15	1		
7546	1065	2055	non-pregnant			19	23
		2056	16	13	3		
7547	1066	2057	16	17	1	3	6
		2058	16	15	1		
7548	1068	2059	13	13	0	6	4
		2060	17	15	1		
7549	1069	2061	15	14	0	4	0
		2062	15	16	0		
7550	1070	2063	18	11	1	22	8
		2064	16	15	1		
7551	1072	2065	non-pregnant			18	67
		2066	11	9	6		
7552	1073	2067	16	17	0	0	3
		2068	17	17	1		
7553	1074	2069	22	18	0	9	0
		2070	13	15	0		
7554	1075	2071	non-pregnant			7	0
		2072	15	14	0		
7698	1175	2073	19	12	1	58	54
		2074	10	2	2		
7555	1077	2075	18	18	1	3	3
		2076	17	16	0		
7556	1078	2077	non-pregnant				
		2078	non-pregnant				
7557	1181	2079	11	14	1	0	4
		2080	11	16	0		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 3	1.1 $\pm$ 1.4	11 $\pm$ 14	11 $\pm$ 18

Total fertile males = 19

Total fertile males impregnating two females = 13

TABLE A-7 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 12
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	2081	14	16	1	6	7
		2082	15	13	1		
7609	1098	2083	non-pregnant			0	0
		2084	15	15	0		
7610	1099	2085	18	14	0	14	0
		2086	15	14	0		
7611	1100	2087	15	15	2	3	10
		2088	16	15	1		
7612	1101	2089	13	12	2	4	12
		2090	13	15	1		
7613	1102	2091	14	15	0	0	7
		2092	13	14	2		
7614	1103	2093	13	13	3	0	15
		2094	14	14	1		
7615	1104	2095	14	11	5	30	22
		2096	5	3	0		
7616	1105	2097	11	12	1	0	16
		2098	13	13	1		
7617	1106	2099	16	12	0	20	0
		2100	19	16	0		
7618	1107	2101	14	15	0	6	0
		2102	16	14	0		
7619	1110	2103	12	11	1	8	4
		2104	13	12	0		
7620	1111	2105	19	15	1	26	15
		2106	19	13	3		
7621	1112	2107	21	12	0	32	0
		2108	18	14	0		
7622	1113	2109	17	17	1	9	10
		2110	17	14	2		
7623	1114	2111	13	14	0	0	7
		2112	14	14	2		
7624	1115	2113	16	19	1	0	5
		2114	non-pregnant				
7625	1116	2115	18	18	4	8	24
		2116	18	15	4		
7626	1117	2117	14	14	0	0	6
		2118	15	15	2		
7627	1118	2119	14	14	0	0	12
		2120	13	13	3		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 2	1.2 $\pm$ 1.0	8 $\pm$ 10	9 $\pm$ 7

Total fertile males = 20

Total fertile males impregnating two females = 18

TABLE A-7 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 12
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7678	1136	2121	15	14	0	4	4
		2122	13	14	1		
7679	1137	2123	13	15	3	0	16
		2124	15	15	2		
7680	1138	2125	13	15	0	0	4
		2126	14	15	1		
7681	1139	2127	17	16	1	3	10
		2128	14	15	2		
7682	1140	2129	15	14	3	7	60
		2130	— ^a	1	1		
7683	1141	2131	12	15	2	0	6
		2132	13	13	0		
7684	1142	2133	19	14	7	13	29
		2134	13	13	1		
7685	1143	2135	15	12	2	20	17
		2136	non-pregnant				
7686	1144	2137	non-pregnant			31	36
		2138	16	11	4		
7687	1145	2139	non-pregnant				
		2140	non-pregnant				
7688	1146	2141	12	11	1	12	18
		2142	13	11	3		
7689	1147	2143	15	13	0	15	20
		2144	12	10	4		
7690	1148	2145	dead			28	15
		2146	18	13	2		
7691	1149	2147	13	10	3	23	30
		2148	non-pregnant				
7692	1150	2149	12	12	1	0	8
		2150	non-pregnant				
7693	1151	2151	14	15	1	0	30
		2152	9	13	7		
7694	1152	2153	— ^a	— ^a	— ^a	19	8
		2154	16	13	1		
7695	1153	2155	13	15	2	8	24
		2156	13	11	4		
7696	1154	2157	15	18	2	3	18
		2158	18	17	4		
7697	1155	2159	15	10	1	16	5
		2160	13	14	0		
Mean ± S.D.			14±2	13±2	2.1±1.2	11±10	19±14

Total fertile males = 19

Total fertile males impregnating two females = 14

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 12th week of the study.

^aData inadvertently were not recorded.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-8

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 14
 Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	2201	16	16	0	0	0
		2202	15	17	0		
7470	1021	2203	15	17	0	0	0
		2204	12	12	0		
7471	1022	2205	13	15	0	0	0
		2206	14	14	0		
7472	1023	2207	15	16	0	3	0
		2208	18	17	0		
7473	1024	2209	16	17	0	0	0
		2210	non-pregnant				
7474	1025	2211	non-pregnant			11	12
		2212	18	16	2		
7475	1026	2213	13	13	0	0	4
		2214	14	15	1		
7476	1027	2215	13	14	0	6	0
		2216	18	16	0		
7477	1028	2217	16	16	0	6	0
		2218	18	16	0		
7478	1029	2219	non-pregnant			0	17
		2220	12	12	2		
7479	1030	2221	15	17	2	0	6
		2222	16	16	0		
7480	1032	2223	13	15	2	0	12
		2224	10	10	1		
7481	1033	2225	12	15	1	0	7
		2226	non-pregnant				
7482	1034	2227	15	16	0	0	0
		2228	11	14	0		
7483	1035	2229	14	14	0	0	0
		2230	15	17	0		
7484	1036	2231	18	14	1	27	4
		2232	19	13	0		
7485	1037	2233	16	16	1	6	3
		2234	15	13	0		
7486	1182	2235	13	13	1	0	4
		2236	12	16	0		
7487	1039	2237	14	13	1	4	7
		2238	14	16	1		
7488	1040	2239	17	16	1	6	6
		2240	non-pregnant				
Mean $\pm$ S.D.			15 $\pm$ 2	15 $\pm$ 1	0.6 $\pm$ 0.7	3 $\pm$ 6	4 $\pm$ 5

Total fertile males = 20

Total fertile males impregnating two females = 15

TABLE A-8 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 14
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7539	1057	2241	13	13	0	0	4
		2242	14	14	1		
7540	1058	2243	13	13	0	0	6
		2244	15	15	2		
7541	1059	2245	12	12	0	0	0
		2246	15	17	0		
7542	1060	2247	10	9	2	5	16
		2248	11	11	1		
7543	1062	2249	12	14	1	19	4
		2250	14	11	0		
7544	1063	2251	14	14	2	11	7
		2252	9	7	0		
7545	1064	2253	non-pregnant			0	0
		2254	14	14	0		
7546	1065	2255	16	15	1	3	7
		2256	14	14	1		
7547	1066	2257	13	14	0	0	4
		2258	13	13	1		
7548	1068	2259	14	14	0	0	4
		2260	13	13	1		
7549	1069	2261	12	13	0	0	0
		2262	non-pregnant				
7550	1070	2263	13	14	1	0	7
		2264	12	14	1		
7551	1072	2265	16	14	4	6	20
		2266	12	16	2		
7552	1073	2267	15	15	0	0	0
		2268	16	16	0		
7553	1074	2269	17	17	1	14	3
		2270	11	8	0		
7554	1075	2271	15	16	1	41	3
		2272	11	2	0		
7698	1175	2273	12	12	1	6	4
		2274	16	14	0		
7555	1077	2275	16	16	0	6	0
		2276	16	14	0		
7556	1078	2277	15	14	0	7	0
		2278	non-pregnant				
7557	1181	2279	15	15	0	0	0
		2280	11	11	0		
Mean $\pm$ S.D.			14 $\pm$ 1	13 $\pm$ 2	0.6 $\pm$ 0.7	6 $\pm$ 10	4 $\pm$ 5

Total fertile males = 20

Total fertile males impregnating two females = 17

TABLE A-8 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 14
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	2281	12	14	1	0	7
		2282	non-pregnant				
7609	1098	2283	12	12	2	0	17
		2284	non-pregnant				
7610	1099	2285	15	12	0	21	0
		2286	9	7	0		
7611	1100	2287	11	13	0	3	0
		2288	16	15	0		
7612	1101	2289	15	12	0	13	0
		2290	16	15	2		
7613	1102	2291	non-pregnant			15	0
		2292	13	11	0		
7614	1103	2293	14	15	0	0	4
		2294	15	15	1		
7615	1104	2295	13	13	2	0	8
		2296	12	13	0		
7616	1105	2297	15	15	1	0	4
		2298	12	12	0		
7617	1106	2299	11	11	1	0	4
		2300	13	15	0		
7618	1107	2301	17	15	0	9	0
		2302	16	15	0		
7619	1110	2303	12	13	0	0	0
		2304	9	9	0		
7620	1111	2305	13	10	1	12	8
		2306	14	14	1		
7621	1112	2307	non-pregnant			0	6
		2308	17	17	1		
7622	1113	2309	17	17	1	4	3
		2310	14	13	0		
7623	1114	2311	15	14	1	4	10
		2312	14	15	2		
7624	1115	2313	14	11	2	14	13
		2314	14	13	1		
7625	1116	2315	10	13	0	14	4
		2316	15	11	1		
7626	1117	2317	14	14	0	0	4
		2318	14	15	1		
7627	1118	2319	non-pregnant				
		2320	non-pregnant				
Mean $\pm$ S.D.			14 $\pm$ 2	13 $\pm$ 2	0.7 $\pm$ 0.6	6 $\pm$ 7	5 $\pm$ 5

Total fertile males = 19

Total fertile males impregnating two females = 15

TABLE A-8 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 14
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7678	1136	2321	13	13	0	0	9
		2322	11	11	2		
7679	1137	2323	non-pregnant			0	0
		2324	12	12	0		
7680	1138	2325	14	14	0	4	7
		2326	15	14	2		
7681	1139	2329	non-pregnant			0	43
		2330	13	14	6		
7682	1140	2327	11	11	2	21	9
		2328	12	7	0		
7683	1141	2331	non-pregnant			6	0
		2332	18	17	0		
7684	1142	2333	15	15	5	0	20
		2334	13	15	1		
7685	1143	2335	14	15	3	10	14
		2336	14	11	1		
7686	1144	2337	non-pregnant			20	33
		2338	15	12	4		
7687	1145	2339	17	15	3	6	10
		2340	11	11	0		
7688	1146	2341	15	13	4	6	38
		2342	11	11	5		
7689	1147	2343	15	17	2	0	12
		2344	non-pregnant				
7690	1148	2345	non-pregnant			0	20
		2346	15	15	3		
7691	1149	2347	16	14	4	6	25
		2348	15	15	3		
7692	1150	2349	15	14	1	7	7
		2350	non-pregnant				
7693	1151	2351	15	16	1	0	6
		2352	16	16	1		
7694	1152	2353	14	15	8	16	26
		2354	16	11	0		
7695	1153	2355	13	12	6	4	32
		2356	12	15	2		
7696	1154	2357	18	16	1	12	20
		2358	14	12	4		
7697	1155	2359	13	13	1	0	4
		2360	12	13	0		
Mean ± S.D.			14±2	14±2	2.3±1.7	6±7	17±13

Total fertile males = 20

Total fertile males impregnating two females = 13

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 14th week of the study.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-9

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 16
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-imp Loss	$\bar{A}$ Post-imp Loss
77-7469	1019	2601	15	13	1	6	4
		2602	15	16	0		
7470	1021	2603	15	16	0	0	0
		2604	16	16	0		
7471	1022	2605	16	16	2	0	16
		2606	15	15	3		
7472	1023	2607	16	0	16	100	0
		2608	non-pregnant				
7473	1024	2609	13	8	0	26	0
		2610	14	12	0		
7474	1025	2611	13	14	1	3	4
		2612	18	17	0		
7475	1026	2613	13	13	0	0	7
		2614	15	15	2		
7476	1027	2615	17	17	1	0	15
		2616	13	17	4		
7477	1028	2617	non-pregnant			12	7
		2618	17	15	1		
7478	1029	2619	15	16	0	0	0
		2620	20	20	0		
7479	1030	2621	12	15	1	4	4
		2622	15	14	0		
7480	1032	2623	12	4	1	34	39
		2624	14	17	9		
7481	1033	2625	16	14	0	12	0
		2626	non-pregnant				
7482	1034	2627	14	16	1	0	3
		2628	16	16	0		
7483	1035	2629	16	16	1	0	6
		2630	non-pregnant				
7484	1036	2631	20	19	0	2	0
		2632	15	16	0		
7485	1037	2633	19	16	7	11	28
		2634	18	17	2		
7486	1182	2635	15	14	1	4	4
		2636	15	15	0		
7487	1039	2637	16	16	1	8	3
		2638	13	11	0		
7488	1040	2639	15	16	0	6	0
		2640	18	16	0		
Mean $\pm$ S.D.			16 $\pm$ 1	14 $\pm$ 4	1.8 $\pm$ 3.6	11 $\pm$ 23	7 $\pm$ 10

Total fertile males = 20

Total fertile males impregnating two females = 16

TABLE A-9 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 16
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7539	1057	2641*				0	14
		2642	14	14	2		
7540	1058	2643	15	15	2	0	13
		2644*					
7541	1059	2645	15	14	0	7	0
		2646*					
7542	1060	2647*				7	0
		2648	15	14	0		
7543	1062	2649	15	17	0	4	0
		2650	15	14	0		
7544	1063	2651	14	14	2	0	10
		2652	15	15	1		
7545	1064	2653	17	17	1	0	3
		2654	18	18	0		
7546	1065	2655	16	14	2	6	10
		2656	15	15	1		
7547	1066	2657	12	12	0	4	7
		2658	13	14	2		
7548	1068	2659	11	5	0	40	0
		2660	17	13	0		
7549	1069	2661	11	11	0	4	0
		2662	13	12	0		
7550	1070	2663	17	16	0	10	0
		2664	14	12	0		
7551	1072	2665	14	13	0	4	3
		2666	18	18	1		
7552	1073	2667	14	13	0	7	0
		2668	non-pregnant				
7553	1074	2669	16	15	2	7	10
		2670	13	14	1		
7554	1075	2671	13	13	0	0	0
		2672	14	15	0		
7698	1175	2673	13	13	2	38	24
		2674	13	3	1		
7555	1077	2675	16	4	1	75	25
		2676	non-pregnant				
7556	1078	2677	18	17	1	6	6
		2678	non-pregnant				
7557	1181	2679	17	13	4	12	16
		2680	13	13	0		

Mean ± S.D.

15±2

13±3

0.8±0.8

12±19

7±8

Total fertile males = 20

Total fertile males impregnating two females = 16

TABLE A-9 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 16
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-imp Loss	$\bar{A}$ Post-imp Loss
77-7608	1097	2681	15	15	2	4	6
		2682	15	14	0		
7609	1098	2683	14	13	1	7	8
		2684	non-pregnant				
7610	1099	2685	14	14	0	0	0
		2686	14	14	0		
7611	1100	2687	14	12	0	7	0
		2688	15	16	0		
7612	1101	2689	13	14	2	3	7
		2690	16	15	0		
7613	1102	2691	12	15	1	12	8
		2692	16	12	1		
7614	1103	2693	14	14	10	0	36
		2694	14	14	0		
7615	1104	2695	14	13	2	4	8
		2696	14	15	0		
7616	1105	2697	13	14	0	0	7
		2698	13	14	2		
7617	1106	2699	11	12	0	0	0
		2700	non-pregnant				
7618	1107	2701	non-pregnant			7	7
		2702	15	14	1		
7619	1110	2703	11	9	1	18	11
		2704	non-pregnant				
7620	1111	2705	17	18	2	0	11
		2706	non-pregnant				
7621	1112	2707	13	11	2	8	13
		2708	13	13	1		
7622	1113	2709	14	6	0	57	0
		2710	non-pregnant				
7623	1114	2711	13	12	0	4	4
		2712	15	15	1		
7624	1115	2713	15	15	2	0	13
		2714	non-pregnant				
7625	1116	2715	non-pregnant			0	0
		2716	11	11	0		
7626	1117	2717	14	16	2	12	6
		2718	18	16	0		
7627	1118	2719	15	15	5	6	16
		2720	16	14	0		
Mean $\pm$ S.D.			14 $\pm$ 2	13 $\pm$ 2	1.1 $\pm$ 1.2	7 $\pm$ 13	8 $\pm$ 8

Total fertile males = 20

Total fertile males impregnating two females = 12

TABLE A-9 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 16
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7678	1136	2721	15	14	2	4	17
		2722	15	15	3		
7679	1137	2723	15	16	1	0	6
		2724	15	15	1		
7680	1138	2725	14	8	2	68	62
		2726	14	1	1		
7681	1139	2727	15	15	1	0	8
		2728	10	13	1		
7682	1140	2729	13	12	3	4	28
		2730	14	16	5		
7683	1141	2731	14	15	1	0	16
		2732	16	16	4		
7684	1142	2733	13	15	8	6	40
		2734	17	15	4		
7685	1143	2735	11	13	2	0	11
		2736	14	14	1		
7686	1144	2737	non-pregnant			7	7
		2738	15	14	1		
7687	1145	2739	non-pregnant			0	19
		2740	16	16	3		
7688	1146	2741	14	14	2	4	7
		2742	12	11	0		
7689	1147	2743	17	14	10	9	36
		2744	14	15	0		
7690	1148	2745	16	16	1	0	3
		2746	11	13	0		
7691	1149	2747	15	12	1	10	8
		2748	13	13	1		
7692	1150	2749	15	14	0	4	14
		2750	14	14	4		
7693	1151	2751	16	17	3	0	18
		2752	non-pregnant				
7694	1152	1753	15	15	1	0	7
		2754	14	14	1		
7695	1153	2755	15	8	0	24	0
		2756	13	13	0		
7696	1154	2757	14	12	0	14	0
		2758	non-pregnant				
7697	1155	2759	14	13	4	4	19
		2760	15	15	1		
Mean $\pm$ S.D.			14 $\pm$ 1	14 $\pm$ 3	2.0 $\pm$ 1.6	8 $\pm$ 15	16 $\pm$ 15

Total fertile males = 20

Total fertile males impregnating two females = 16

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 16th week of the study.

*Animals lost ear tags and were not identifiable

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

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TABLE A-10

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 19
 Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	3301	13	14	1	0	7
		3302	non-pregnant				
7470	1021	3303	non-pregnant			25	8
		3304	16	12	1		
7471	1022	3305	15	13	1	10	4
		3306	14	13	0		
7472	1023	3307	13	8	1	19	6
		3308	13	14	0		
7473	1024	3461	non-pregnant			0	7
		3310	14	15	1		
7474	1025	3311	14	10	2	14	14
		3312	14	14	1		
7475	1026	3313	14	14	2	0	7
		3314	11	13	0		
7476	1027	3315	13	16	1	0	3
		3316	17	17	0		
7477	1028	3317	14	13	1	4	4
		3318	12	13	0		
7478	1029	3319	12	15	1	0	4
		3320	17	18	0		
7479	1030	3321	16	16	1	0	9
		3322	17	17	2		
7480	1032	3323	18	15	0	8	0
		3324	12	12	0		
7481	1033	3325	non-pregnant			0	0
		3326	13	13	0		
7482	1034	3327	12	15	1	0	4
		3328	16	16	0		
7483	1035	3329	15	15	0	0	6
		3330	15	16	2		
7484	1036	3331	17	16	0	3	0
		3332	11	14	0		
7485	1037	3333	15	15	0	6	4
		3334	17	15	1		
7486	1182	3335	15	13	1	36	4
		3336	15	6	0		
7487	1039	3337	15	15	0	6	0
		3338	17	15	0		
7488	1040	3339	16	13	1	10	4
		3340	15	15	0		
Mean $\pm$ S.D.			14 $\pm$ 1	14 $\pm$ 2	0.6 $\pm$ 0.4	7 $\pm$ 10	5 $\pm$ 3

Total fertile males = 20

Total fertile males impregnating two females = 16

TABLE A-10 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 19
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7539	1057	3341	16	17	0	4	4
		3342	14	13	1		
7540	1058	3343	14	15	0	0	3
		3344	16	16	1		
7541	1059	3345	14	15	1	4	4
		3346	14	13	0		
7542	1060	3347	15	13	0	6	0
		3348	15	15	0		
7543	1062	3349	non-pregnant				
		3350	non-pregnant				
7544	1063	3351	non-pregnant			0	0
		3352	14	14	0		
7545	1064	3353	17	16	0	8	6
		3354	19	17	2		
7546	1065	3355	non-pregnant			6	19
		3356	17	16	3		
7547	1066	3357	13	9	2	16	11
		3358	13	13	0		
7548	1068	3359	15	15	2	4	6
		3360	15	14	0		
7549	1069	3361	19	20	0	0	3
		3362	16	17	1		
7550	1070	3363	17	14	0	32	14
		3364	13	7	2		
7551	1072	3365	17	19	3	0	8
		3366	15	15	0		
7552	1073	3367	19	19	0	0	4
		3368	14	15	1		
7553	1074	3369	16	17	0	8	4
		3370	18	15	1		
7554	1075	3371	15	15	1	0	7
		3372	non-pregnant				
7698	1175	3373	non-pregnant			21	36
		3374	14	11	4		
7555	1077	3375	16	17	0	3	6
		3376	18	17	2		
7556	1078	3377	13	13	0	0	4
		3378	12	14	1		
7557	1181	3379	13	11	0	8	0
		3380	12	13	0		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 2	0.9 $\pm$ 1.0	6 $\pm$ 8	7 $\pm$ 8

Total fertile males = 19

Total fertile males impregnating two females = 15

TABLE A-10 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 19
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	3381	13	11	0	8	0
		3382	13	15	0		
7609	1098	3383	14	15	1	4	4
		3384	15	14	0		
7610	1099	3385	16	15	0	6	0
		3386	17	18	0		
7611	1100	3387	15	15	0	9	0
		3388	17	14	0		
7612	1101	3389	19	18	0	2	2
		3390	18	19	1		
7613	1102	3391	13	11	1	14	4
		3392	17	15	0		
7614	1103	3393	14	18	0	0	0
		3394	12	14	0		
7615	1104	3395	10	9	2	5	11
		3396	11	14	0		
7616	1105	3397	18	15	0	17	0
		3398	non-pregnant				
7617	1106	3399	15	16	0	0	4
		3475	15	15	1		
7618	1107	3401	11	14	1	0	4
		3402	15	16	0		
7619	1110	3403	13	13	0	0	0
		3404	13	15	0		
7620	1111	3405	16	16	1	0	6
		3406	14	16	1		
7621	1112	3407	17	16	0	3	6
		3408	15	16	2		
7622	1113	3409	19	19	0	0	0
		3410	non-pregnant				
7623	1114	3411	15	15	3	8	10
		3412	13	11	0		
7624	1115	3413	non-pregnant			64	0
		3414	14	5	0		
7625	1116	3415	13	15	1	0	4
		3416	12	13	0		
7626	1117	3417	14	13	0	14	4
		3418	15	12	1		
7627	1118	3419	15	16	1	0	6
		3420	17	18	1		
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 3	0.4 $\pm$ 0.4	8 $\pm$ 14	3 $\pm$ 3

Total fertile males = 20

Total fertile males impregnating two females = 17

TABLE A-10 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 19
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7678	1136	3421	15	15	0	0	3
		3422	17	18	1		
7679	1137	3423	11	12	1	0	8
		3424	non-pregnant				
7680	1138	3425	non-pregnant			0	0
		3426	12	12	0		
7681	1139	3427	12	14	0	0	12
		3428	14	16	4		
7682	1140	3429	12	12	3	4	17
		3430	12	11	1		
7683	1141	3431	non-pregnant				
		3432	non-pregnant				
7684	1142	3433	non-pregnant			0	18
		3434	11	11	2		
7685	1143	3435	14	14	0	0	0
		3436	13	13	0		
7686	1144	3437	13	15	4	0	27
		3438	non-pregnant				
7687	1145	3439	13	15	1	11	22
		3440	18	14	5		
7688	1146	3441	15	16	1	0	10
		3442	14	15	2		
7689	1147	3443	16	14	2	12	14
		3444	non-pregnant				
7690	1148	3445	14	12	1	7	4
		3446	14	15	0		
7691	1149	3447	16	16	0	4	28
		3448	12	11	6		
7692	1150	3449	non-pregnant			12	21
		3450	16	14	3		
7693	1151	3451	14	13	2	7	15
		3452	non-pregnant				
7694	1152	3453	12	12	0	3	0
		3454	16	15	0		
7695	1153	3455	12	14	1	0	4
		3456	15	17	0		
7696	1154	3457	15	18	1	8	3
		3458	13	11	0		
7697	1155	3459	15	14	1	4	7
		3460	13	14	1		
Mean ± S.D.			14±2	14±1	1.5±1.2	4±4	11±9

Total fertile males = 19

Total fertile males impregnating two females = 12

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 19th week of the study.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-11

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 24
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	4001	11	13	0	0	0
		4002	19	19	0		
7470	1021	4003	13	12	0	14	4
		4004	19	15	1		
7471	1022	4005	14	13	1	4	4
		4006	15	16	0		
7472	1023	4007	13	12	0	4	0
		4008	14	14	0		
7473	1024	4009	non-pregnant			0	8
		4010	13	13	1		
7474	1025	4011	20	15	2	12	19
		4012	11	12	3		
7475	1026	4013	16	16	2	0	12
		4014	non-pregnant				
7476	1027	4015	14	13	0	7	0
		4016	15	14	0		
7477	1028	4017	13	14	2	6	14
		4018	15	13	2		
7478	1029	4019	non-pregnant			0	0
		4020	13	14	0		
7479	1030	4021	13	14	0	14	0
		4022	15	11	0		
7480	1032	4023	15	15	0	4	4
		4024	14	13	1		
7481	1033	4025	13	14	1	0	7
		4026	non-pregnant				
7482	1034	4027	13	14	0	0	0
		4028	13	13	0		
7483	1035	4029	14	14	0	3	0
		4030	16	15	0		
7484	1036	4031	17	15	0	12	0
		4032	non-pregnant				
7485	1037	4033	16	12	0	25	0
		4034	non-pregnant				
7486	1182	4035	14	10	0	29	0
		4036	non-pregnant				
7487	1039	4037	13	14	1	0	8
		4038	13	13	1		
7488	1040	4039	19	17	1	9	3
		4040	15	14	0		
Mean $\pm$ S.D.			14 $\pm$ 1	14 $\pm$ 1	0.6 $\pm$ 0.8	7 $\pm$ 8	4 $\pm$ 6

Total fertile males = 20

Total fertile males impregnating two females = 13

TABLE A-11 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 24
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
77-7539	1057	4041	15	15	1	0	4
		4042	13	15	0		
7540	1058	4043	13	14	1	0	7
		4044	non-pregnant				
7541	1059	4045	18	14	3	11	18
		4046	11	13	2		
7542	1060	4047	non-pregnant			0	13
		4048	14	15	2		
7543	1062	4049	non-pregnant			0	0
		4050	17	17	0		
7544	1063	4051	16	14	1	10	4
		4052	13	12	0		
7545	1064	4053	15	14	0	7	0
		4054	non-pregnant				
7546	1065	4055	16	15	7	3	24
		4056	13	13	0		
7547	1066	4057	non-pregnant			0	0
		4058	11	11	0		
7548	1068	4059	13	11	2	14	9
		4060	15	13	0		
7549	1069	4061	14	14	0	0	0
		4062	12	14	0		
7550	1070	4063	12	11	0	8	0
		4064	non-pregnant				
7551	1072	4065	12	2	2	45	54
		4066	15	14	1		
7552	1073	4067	14	14	1	0	7
		4068	15	15	1		
7553	1074	4069	14	14	0	8	0
		4070	13	11	0		
7554	1075	4071	14	14	0	7	0
		4072	14	12	0		
7698	1175	4073	non-pregnant				
		4074	non-pregnant				
7555	1077	4075	non-pregnant			8	8
		4076	13	12	1		
7556	1078	4077	11	13	0	0	0
		4078	non-pregnant				
7557	1181	4079	13	15	3	0	13
		4080	16	17	1		
Mean ± S.D.			14±1	13±2	0.9±1.0	6±10	8±13

Total fertile males = 19

Total fertile males impregnating two females = 11

TABLE A-11 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 24
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	4081	12	12	2	4	19
		4082	15	14	3		
7609	1098	4083	14	15	1	0	7
		4084	non-pregnant				
7610	1099	4085	14	14	2	11	7
		4086	18	14	0		
7611	1100	4087	14	15	0	0	0
		4088	non-pregnant				
7612	1101	4089	non-pregnant				
		4090	non-pregnant				
7613	1102	4091	non-pregnant			0	0
		4092	15	15	0		
7614	1103	4093	non-pregnant			6	13
		4094	16	15	2		
7615	1104	4095	11	7	0	36	0
		4096	non-pregnant				
7616	1105	4097	17	15	2	6	13
		4098	14	15	2		
7617	1106	4099	13	13	0	6	4
		4100	16	14	1		
7618	1107	4101	15	15	2	0	10
		4102	16	16	1		
7619	1110	4103	non-pregnant				
		4104	non-pregnant				
7620	1111	4105	13	13	0	3	0
		4106	16	15	0		
7621	1112	4107	14	11	0	22	4
		4108	18	14	1		
7622	1113	4109	15	14	1	10	15
		4110	15	13	3		
7623	1114	4111	non-pregnant			0	7
		4112	15	15	1		
7624	1115	4113	15	15	1	25	4
		4114	12	6	0		
7625	1116	4115	12	12	0	6	0
		4116	15	13	0		
7626	1117	4117	14	16	0	3	4
		4118	16	15	1		
7627	1118	4119	13	13	0	0	0
		4120	13	13	0		
Mean $\pm$ S.D.			14 $\pm$ 1	14 $\pm$ 2	0.8 $\pm$ 0.8	8 $\pm$ 10	6 $\pm$ 6

Total fertile males = 18

Total fertile males impregnating two females = 12

TABLE A-11 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 24
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7678	1136	4121	14	13	0	7	0
		4122	non-pregnant				
7679	1137	4123	13	13	1	6	10
		4124	18	16	2		
7680	1138	4125	12	14	0	0	4
		4126	13	13	1		
7681	1139	4127	13	13	1	0	7
		4128	15	16	1		
7682	1140	4129	14	14	1	9	7
		4130	17	14	1		
7683	1141	4131	non-pregnant			6	7
		4132	16	15	1		
7684	1142	4133	18	17	0	6	4
		4134	14	13	1		
7685	1143	4135	13	13	2	0	11
		4136	14	14	1		
7686	1144	4137	15	13	0	13	0
		4138	non-pregnant				
7687	1145	4139	16	14	1	9	4
		4140	16	15	0		
7688	1146	4141	12	13	0	8	4
		4142	18	15	1		
7689	1147	4143	11	11	1	0	6
		4144	13	15	1		
7690	1148	4145	17	12	1	18	4
		4146	15	14	0		
7691	1149	4147	16	14	0	6	0
		4148	13	14	0		
7692	1150	4149	non-pregnant			0	0
		4150	15	15	0		
7693	1151	4151	16	14	1	6	4
		4152	14	14	0		
7694	1152	4153	non-pregnant			25	0
		4154	16	12	0		
7695	1153	4155	non-pregnant			0	18
		4156	11	11	2		
7696	1154	4157	15	13	1	13	8
		4158	non-pregnant				
7697	1155	4159	14	15	0	0	0
		4160	non-pregnant				
Mean $\pm$ S.D.			15 $\pm$ 2	14 $\pm$ 1	0.6 $\pm$ 0.6	7 $\pm$ 7	5 $\pm$ 5

Total fertile males = 20

Total fertile males impregnating two females = 12

[†]Male rats exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 24th week of the study.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

TABLE A-12

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 29
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7469	1019	4201	15	13	2	6	12
		4202	12	13	1		
7470	1021	4203	non-pregnant			0	0
		4204	14	14	0		
7471	1022	4205	12	14	1	0	4
		4206	12	13	0		
7472	1023	4207	non-pregnant			6	7
		4208	16	15	1		
7473	1024	4209	15	14	0	4	4
		4210	15	15	1		
7474	1025	4211	19	15	2	10	16
		4212	15	15	3		
7475	1026	4213	16	16	2	0	10
		4214	13	13	1		
7476	1027	4215	non-pregnant			6	7
		4216	16	15	1		
7477	1028	4217	13	13	0	19	0
		4218	13	8	0		
7478	1029	4219	16	15	1	3	7
		4220	15	15	1		
7479	1030	4221	16	11	1	24	4
		4222	17	14	0		
7480	1032	4223	13	13	0	0	4
		4224	14	14	1		
7481	1033	4225	non-pregnant			0	12
		4226	15	16	2		
7482	1034	4227	11	13	0	0	0
		4228	non-pregnant				
7483	1035	4229	13	12	1	8	8
		4230	non-pregnant				
7484	1036	4231	16	15	0	6	0
		4232	15	14	0		
7485	1037	4233	12	14	0	0	0
		4234	12	12	0		
7486	1182	4235	15	14	1	15	4
		4236	13	10	0		
7487	1039	4237	17	20	0	0	14
		4238	11	11	3		
7488	1040	4239	13	13	0	0	0
		4240	non-pregnant				
Mean $\pm$ S.D.			14 $\pm$ 2	14 $\pm$ 1	0.8 $\pm$ 0.7	5 $\pm$ 7	6 $\pm$ 5

Total fertile males = 20

Total fertile males impregnating two females = 13

TABLE A-12 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 29
Exposure Level: 0.1 ppm

<u>Animal Number Male</u>	<u>Ear Number Male</u>	<u>Ear Number Female</u>	<u>Corpora Lutea</u>	<u>Implantations</u>	<u>Resorptions</u>	<u>X Pre-imp Loss</u>	<u>X Post-imp Loss</u>
77-7539	1057	4241	15	16	0	4	0
		4242	13	12	0		
7540	1058	4243	13	13	0	3	0
		4244	16	15	0		
7541	1059	4245	13	13	1	0	7
		4246	15	16	1		
7542	1060	4247	13	13	0	9	0
		4248	17	14	0		
7543	1062	4249	17	17	2	0	6
		4250	13	14	0		
7544	1063	4251	non-pregnant			0	0
		4252	12	15	0		
7545	1064	4253	15	16	1	0	3
		4254	13	13	0		
7546	1065	4255	17	14	0	9	4
		4256	12	12	1		
7547	1066	4257	17	16	0	7	4
		4258	13	12	1		
7548	1068	4259	13	11	1	8	4
		4260	15	16	0		
7549	1069	4261	15	15	0	6	0
		4262	16	14	0		
7550	1070	4263	11	12	0	0	4
		4264	14	14	1		
7551	1072	4265	15	16	0	0	0
		4266	11	13	0		
7552	1073	4267	14	14	0	0	0
		4268	15	16	0		
7553	1074	4269	non-pregnant			7	0
		4270	14	13	0		
7554	1075	4271	17	14	0	14	3
		4272	19	17	1		
7698	1175	4273	13	14	1	10	8
		4274	15	12	1		
7555	1077	4275	12	14	0	0	0
		4276	14	14	0		
7556	1078	4277	12	12	1	0	14
		4278	12	14	3		
7557	1181	4279	non-pregnant			16	0
		4280	19	16	0		
Mean ± S.D.			14±2	14±1	0.4±0.5	5±5	3±4

Total fertile males = 20

Total fertile males impregnating two females = 17

TABLE A-12 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 29
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7608	1097	4281	17	14	1	9	8
		4282	11	12	1		
7609	1098	4283	non-pregnant				
		4284	non-pregnant				
7610	1099	4285	16	15	1	6	7
		4286	non-pregnant				
7611	1100	4287	13	13	0	0	0
		4288	16	19	0		
7612	1101	4289	18	14	0	11	4
		4290	12	13	1		
7613	1102	4291	15	15	0	0	0
		4292	16	16	0		
7614	1103	4293	16	13	3	10	18
		4294	14	15	2		
7615	1104	4295	non-pregnant			0	0
		4296	15	15	0		
7616	1105	4297	13	14	0	4	4
		4298	13	12	1		
7617	1106	4299	11	1	0	48	0
		4300	16	15	0		
7618	1107	4301	16	15	0	6	0
		4302	non-pregnant				
7619	1110	4303	non-pregnant				
		4304	non-pregnant				
7620	1111	4305	14	14	0	7	0
		4306	14	12	0		
7621	1112	4307	non-pregnant				
		4308	non-pregnant				
7622	1113	4309	14	14	0	0	0
		4310	non-pregnant				
7623	1114	4311	10	11	0	0	6
		4312	14	15	2		
7624	1115	4313	15	14	1	4	7
		4314	15	15	1		
7625	1116	4315	non-pregnant			0	0
		4316	17	17	0		
7626	1117	4317	17	15	0	6	6
		4318	15	15	2		
7627	1118	4319	12	10	0	4	0
		4320	11	12	0		
Mean $\pm$ S.D.			14 $\pm$ 1	14 $\pm$ 2	0.5 $\pm$ 0.7	7 $\pm$ 11	4 $\pm$ 5

Total fertile males = 17

Total fertile males impregnating two females = 12

DO 131323
CONFIDENTIAL

TABLE A-12 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP-Exposed Males

Week of Study: 29
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss
77-7678	1136	4321	14	14	0	0	0
		4322	non-pregnant				
7679	1137	4323	14	11	1	10	12
		4324	14	14	2		
7680	1138	4325	19	13	1	20	4
		4326	15	14	0		
7681	1139	4327	18	11	0	39	0
		4328	non-pregnant				
7682	1140	4329	14	13	0	8	0
		4330	13	12	0		
7683	1141	4331	14	12	1	10	14
		4332	16	15	3		
7684	1142	4333	non-pregnant			7	7
		4334	15	14	1		
7685	1143	4335	15	15	1	4	7
		4336	15	14	1		
7686	1144	4337	13	13	0	6	4
		4338	16	14	1		
7687	1145	4339	13	11	2	15	18
		4340	non-pregnant				
7688	1146	4341	16	16	1	3	3
		4342	16	15	0		
7689	1147	4343	13	11	0	11	8
		4344	14	13	2		
7690	1148	4345	18	15	0	17	0
		4346	non-pregnant				
7691	1149	4347	14	13	0	7	10
		4348	15	14	3		
7692	1150	4349	12	12	1	0	8
		4350	non-pregnant				
7693	1151	4351	non-pregnant			0	0
		4352	15	16	0		
7694	1152	4353	16	14	2	10	7
		4354	14	13	0		
7695	1153	4355	12	13	1	3	4
		4356	16	15	0		
7696	1154	4357	non-pregnant			20	0
		4358	15	12	0		
7697	1155	4359	non-pregnant			12	28
		4360	16	14	4		
Mean $\pm$ S.D.			15 $\pm$ 2	13 $\pm$ 1	0.9 $\pm$ 1.0	10 $\pm$ 9	7 $\pm$ 7

Total fertile males = 20

Total fertile males impregnating two females = 11

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 29th week of the study.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

DO 131324
CONFIDENTIAL

TABLE A-13

DSCP: INHALATION FERTILITY STUDY IN THE RAT¹

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DSCP - Exposed Males

Week of Study: 41
Exposure Level: 0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-imp Loss	$\bar{X}$ Post-imp Loss	Sex Ratio $\frac{M}{F}$	
77-7469	1019	3401	16	15	1	10	11	5	9
		3402	15	13	2			4	7
7470	1021	3403	10	10	0	0	0	6	4
		3404	non-pregnant						
7471	1022	3405	14	14	0	0	0	10	4
		3406	non-pregnant						
7472	1023	3407	14	11	1	21	9	5	5
		3408	non-pregnant						
7473	1024	3409	13	14	2	0	14	8	4
		3410	non-pregnant						
7474	1025	3411	13	13	0	0	4	7	6
		3412	13	13	1			7	5
7475	1026	3413	14	13	1	4	8	6	6
		3414	13	14	1			8	5
7476	1027	3415	16	17	0	0	0	10	7
		3416	delivered early dead, not bred					3	8
7477	1028								
7478	1029	3419	13	11	1	8	4	5	5
		3420	13	13	0			8	4
7479	1030	3421	non-pregnant			0	8		
		3422	12	13	1			5	7
7480	1032	3423	14	16	2	3	13	8	6
		3424	16	15	2			7	6
7481	1033	3425	14	14	0	0	0	7	7
		3426	12	12	0			10	2
7482	1034	3427	16	15	0	39	30	^a	^a
		3428	18	5	3			1	1
7483	1035	3429	16	13	0	10	4	5	8
		3430	12	14	1			4	9
7484	1036	3431	non-pregnant			17	30		
		3432	12	10	3			3	4
7485	1037	3433	15	15	0	12	0	9	6
		3434	16	12	0			7	5
7486	1182	3435	11	11	2	0	9	3	6
		3436	14	14	0			9	5
7487	1039		dead, not bred						
7488	1040	3437	17	14	0	18	0	3	11
		3438	non-pregnant						
Mean $\pm$ S.D.			14 $\pm$ 2	13 $\pm$ 2	0.9 $\pm$ 0.9	8 $\pm$ 10	8 $\pm$ 9	52	48

Total fertile males = 18

Total fertile males impregnating two females = 11

TABLE A-13 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP - Exposed Males

Week of Study: 41
Exposure Level: 0.1 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss	Sex Ratio	
								M	F
77-7539	1057	3439	9	10	0	0	8	6	4
		3440	14	12	0			5	7
7540	1058	3441	11	12	0	3	13	6	6
		3442	18	17	0			10	7
7541	1059	3443	non-pregnant						
		3444	non-pregnant						
7542	1060	3445	16	14	0	12	30	6	8
		3446	non-pregnant						
7543	1062	3447	12	13	0	4	0	7	6
		3448	13	12	0			7	5
7544	1063	3449	11	8	0	14	0	4	4
		3450	13	14	0			7	7
7545	1064	3451	14	14	0	0	0	6	8
		3452	non-pregnant						
7546	1065	3453	non-pregnant			7	0		
		3454	14	13	0			9	4
7547	1066	3455	15	14	0	8	0	6	8
		3456	13	12	0			7	5
7548	1068	3457	16	16	1	0	6	13	2
		3458	non-pregnant						
7549	1069	3459	12	13	0	12	0	7	6
		3460	17	13	0			9	4
7550	1070	3461	15	14	1	4	4	<u>6</u> ^b	<u>7</u> ^b
		3462	13	13	0			6	7
7551	1072	3463	14	14	0	6	0	9	5
		3464	17	15	0			10	5
7552	1073	3465	non-pregnant			0	8		
		3466	13	13	1			5	7
7553	1074	3467	non-pregnant			18	14		
		3468	17	14	2			1	11
7554	1075	3469	17	16	0	7	0	4	12
		3470	13	12	0			3	9
7698	1175	3471	14	8	0	43	0	<u>3</u> ^a	<u>9</u> ^a
		3472	non-pregnant						
7555	1077	3473	13	11	0	8	4	6	5
		3474	12	12	1			7	4
7556	1078	3475	non-pregnant			25	8		
		3476	16	12	1			3	8
7557	1181	3477	non-pregnant			0	0		
		3478	11	12	0			7	5
Mean ± S.D.			14 ± 2	13 ± 2	0.3 ± 0.6	9 ± 10	5 ± 8	51	49

Total fertile males = 19

Total fertile males impregnating two females = 10

TABLE A-13 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP - Exposed Males

Week of Study: 41
Exposure Level: 1.0 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss	Sex Ratio	
								M	F
77-7608	1097	3479	12	10	1	8	5	5	4
		3480	14	15	0			9	6
7609	1098	3481	12	12	0	0	3	7 ^a	8 ^a
		3482	15	16	1			7	8
7610	1099	3483	16	16	0	0	0	8	8
		3484	13	14	0			5	9
7611	1100	3485	non-pregnant			13	0		
		3486	16	14	0			6	8
7612	1101	3487	non-pregnant			0	13		
		3488	12	15	2			7	6
7613	1102	3489	non-pregnant			14	0		
		3490	14	12	0			5	7
7614	1103	3491	14	14	1	0	7	6	7
		3492	13	14	1			7	6
7615	1104	3493	non-pregnant						
		3494	non-pregnant						
7616	1105	3495	12	12	0	4	10	5	7
		3496	15	14	3			6	5
7617	1106	3497	14	12	0	14	0	6	6
		3498	non-pregnant						
7618	1107	3499	14	12	0	14	0	8	4
		3500	non-pregnant						
7619	1110	3501	non-pregnant						
		3502	non-pregnant						
7620	1111	3503	13	12	1	10	10	5	6
		3504	17	15	2			5	6
7621	1112	3505	non-pregnant						
		3506	non-pregnant						
7622	1113	3507	non-pregnant			33	0		
		3508	12	8	0			4	4
7623	1114	3509	17	16	0	3	7	6	10
		3510	14	14	2			6	6
7624	1115	3511	non-pregnant			0	0		
		3512	12	12	0			5	7
7625	1116	3513	15	13	0	13	0	8	5
		3514	non-pregnant						
7626	1117	3515	15	12	0	30	0	6	6
		3516	15	9	0			6	3
7627	1118	3517	14	8	1	22	6	4	3
		3518	13	13	0			6	7
Mean ± S.D.			14 ± 1	13 ± 2	0.5 ± 0.7	10 ± 10	3 ± 4	49	51

Total fertile males = 17

Total fertile males impregnating two females = 9

DO 131327
CONFIDENTIAL

TABLE A-13 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT¹

Individual Observations Made at the Time of Necropsy of
Unexposed Female Rats Mated with DBCP - Exposed Males

Week of Study: 41
Exposure Level: 10 ppm

Animal Number Male	Ear Number Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss	Sex Ratio M F	
77-7678	1136	3519	17	15	0	6	4	4	11
		3520	14	14	1			7	6
7679	1137	3521	14	12	6	10	29	2	4
		3522	14	13	1			7	5
7680	1138		dead, not bred						
7681	1139	3523	non-pregnant			8	0		
		3524	13	12	0			4	8
7682	1140	3525	15	13	0	13	0	7	6
		3526	non-pregnant						
7683	1141	3527	non-pregnant						
		3528	non-pregnant						
7684	1142	3529	11	11	0	0	0	4	7
		3530	non-pregnant						
7685	1143	3531	12	12	0	8	0	7	5
		3532	20	17	0			5	12
7686	1144	3533	12	13	0	0	0	6	7
		3534	non-pregnant						
7687	1145	3535	12	12	0	0	0	7	5
		3536	13	13	0			9	4
7688	1146	3537	12	12	0	0	0	3	9
		3538	12	12	0			6	6
7689	1147	3539	11	13	1	8	4	5	7
		3540	19	16	0			9	7
7690	1148	3541	13	13	0	0	4	7	6
		3542	13	13	1			3	9
7691	1149	3543	non-pregnant			8	0		
		3544	13	12	0			10	2
7692	1150	3545	non-pregnant						
		3546	non-pregnant						
7693	1151	3547	non-pregnant			0	8		
		3548	13	13	1			5	7
7694	1152	3549	non-pregnant			0	20		
		3550	10	10	2			4	4
7695	1153	3551	13	7	3	27	22	1	3
		3552	12	11	0			6	5
7696	1154	3553	16	15	0	12	7	5	10
		3554	17	14	2			6	6
7697	1155	3555	17	16	0	6	0	5	11
		3556	non-pregnant						
Mean ± S.D.			14 ± 2	12 ± 2	0.6 ± 1.0	6 ± 7	6 ± 9	46	54

Total fertile males = 17

Total fertile males impregnating two females = 9

¹Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male was housed with 2 unexposed females for a 7-day breeding period during the 41st week of the study. These females were sacrificed on day 20 of gestation and the fetuses were examined for external alterations and cleft palate.

²Females were not timed pregnant; therefore the pups were smaller than day 20 and were not sexed.

³Female inadvertently was C-sectioned on wrong day, therefore the pups were not sexed.

The average values for the two female rats bred to each male were calculated. Group means were then calculated from these averaged values.

Table A-14

OSCP: INHALATION FERTILITY STUDY IN THE RAT

Individual Litter Summary of Fetal Alterations Among Litters of Unexposed
Female Rats Bred to OSCP Exposed Males During Week 41 of the Study

Exposure Level: 0 ppm																	
Female Ear Number:	3401	3402	3403	3405	3407	3409	3411	3412	3413	3414	3415	3416	3419	3420	3422	3423	3424
External Examination	14	11	10	14	10	Number of Fetuses Examined				13	17	11 ^a	10	12	12	14	13 ^b
						12	13	12	12								
						Number of Fetuses Affected											
Encephaly, spina bifida	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Short tail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bent tail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dead fetus	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Exposure Level: 0.1 ppm																	
Female Ear Number:	3439	3440	3441	3442	3445	3447	3448	3449	3450	3451	3454	3455	3456	3457	3459	3460	3461
External Examination	10	12	12	17	14	Number of Fetuses Examined				14	13	14	12	15 ^b	13	13	— ^c
						13	12	8	14								
						Number of Fetuses Affected											
Encephaly, spina bifida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
Short tail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
Bent tail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
Dead fetus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	—
Exposure Level: 1.0 ppm																	
Female Ear Number:	3479	3480	3481	3482	3483	3484	3486	3488	3490	3491	3492	3495	3496	3497	3499	3503	3504
External Examination	9	15	— ^b	15	16	Number of Fetuses Examined				13	13	12	11	12	12	11	13
						14	14	13	12								
						Number of Fetuses Affected											
Encephaly, spina bifida	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short tail	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bent tail	0	0	—	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Dead fetus	0	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exposure Level: 10 ppm																	
Female Ear Number:	3519	3520	3521	3522	3524	3525	3529	3531	3532	3533	3535	3536	3537	3538	3539	3540	3541
External Examination	15	13	6	12	12	Number of Fetuses Examined				13	12	13	12	12	12	16	13
						13	11	12	17								
						Number of Fetuses Affected											
Encephaly, spina bifida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short tail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bent tail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dead fetus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-14 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT¹

Individual Litter Summary of Fetal Alterations Among Litters of Unexposed
Female Rats Bred to DBCP Exposed Males During Week #1 of the Study

Exposure Level: 0 ppm														Total Fetuses	Total Litters
Female Ear Number:	3425	3426	3427	3428	3429	3430	3432	3433	3434	3435	3436	3437			
External Examination	14	12	— ^b	2	13	Number of Fetuses Examined		13	7	15	12			322	27
						Number of Fetuses Affected		0	0	0	0			1	1
Exencephaly, spina bifida	0	0	—	0	0	0	0	0	0	0	0	0		0	0
Short tail	0	0	—	0	0	0	0	0	0	0	0	0		0	0
Bent tail	0	0	—	0	0	0	0	0	0	0	0	0		0	0
Dead fetus	0	0	—	0	0	0	0	0	0	0	0	0		1	1
Exposure Level: 0.1 ppm															
Female Ear Number:	3462	3463	3464	3466	3468	3469	3470	3471	3473	3474	3476	3478			
External Examination	13	14	15	12	12	Number of Fetuses Examined		16	12	— ^b	11			330	26
						Number of Fetuses Affected		0	0	—	0			0	0
Exencephaly, spina bifida	0	0	0	0	0	0	0	0	0	0	0	0		0	0
Short tail	0	0	0	0	0	0	1	0	0	0	0	0		1	1
Bent tail	0	0	0	0	0	0	0	0	0	0	0	0		0	0
Dead fetus	0	0	0	0	0	0	0	0	0	0	0	0		0	0
Exposure Level: 1.0 ppm															
Female Ear Number:	3508	3509	3510	3512	3513	3515	3516	3517	3518						
External Examination	8	16	12	12	13	Number of Fetuses Examined		12	9	7	13			307	25
						Number of Fetuses Affected		0	0	0	0			0	0
Exencephaly, spina bifida	0	0	0	0	0	0	0	0	0	0	0			0	0
Short tail	0	0	0	0	0	0	0	0	0	0	0			0	0
Bent tail	0	0	0	0	0	0	0	0	0	0	0			1	1
Dead fetus	0	0	0	0	0	0	0	0	0	0	0			0	0
Exposure Level: 10 ppm															
Female Ear Number:	3542	3544	3548	3550	3551	3552	3553	3554	3555						
External Examination	12	12	12	8	4	Number of Fetuses Examined		11	15	12	16			316	26
						Number of Fetuses Affected		0	0	0	0			0	0
Exencephaly, spina bifida	0	0	0	0	0	0	0	0	0	0	0			0	0
Short tail	0	0	0	0	0	0	0	0	0	0	0			0	0
Bent tail	0	0	0	0	0	0	0	0	0	0	0			0	0
Dead fetus	0	0	0	0	0	0	0	0	0	0	0			0	0

¹Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 day/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Each exposed male rat was housed with two unexposed females during the 41st week of the study. These females were sacrificed on day 20 of gestation and the fetuses were examined for external alterations and cleft palate.

²Female delivered early, pups were included in external calculations only.

³Females were not timed pregnant; therefore the pups were not included in the external examination or calculations.

⁴Female inadvertently was C-sectioned on wrong day; therefore the pups were not included in the external examination or calculations.

Table A-15

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices for
Female Rats Exposed to DBCP by Inhalation

(Bred during week 15 and 16 of the post-exposure period)

Exposure Level: 0 ppm

Animal Number	Ear Number	Litter Size ^a	No. Dead Pups on Day 0	No. Live Pups on Day		Sex Ratio Day 1 M:F	Gestation Survival Index (%)	1-Day Survival Index (%)	Morphological Alterations
				0	1				
77-7419	1201 ^b	7	0	6	7	3:4	100	100	
7420	1202	Did not deliver a litter							
7421	1203	8	1	7	7	1:6	88	100	
7422	1204	9	1	8	8	4:4	89	100	
7423	1205	Dead							
7424	1206 ^b	4	0	1	3	2:1	100	100	
7425	1207	10	3	7	6	4:2	70	86	
7426	1208	Did not deliver a litter							
7427	1209	8	0	8	8	6:2	100	100	
7428	1210	15	1	14	14	7:7	93	100	
7429	1211	Did not deliver a litter							
7430	1212	Did not deliver a litter							
7431	1213 ^b	13	0	4	10	5:5	100	100	
7432	1214	7	0	7	7	2:5	100	100	
7433	1215	9	0	9	9	3:6	100	100	
7434	1216	Did not deliver a litter							
7435	1217	6	0	6	6	2:4	100	100	
7436	1218	7	0	7	7	1:6	100	100	
7437	1219 ^b	8	0	4	7	4:3	100	88	
7438	1220 ^b	9	0	2	9	4:5	100	100	
44:56									
Mean±S. D.		9±3	0.4±0.8	6±3	8±2		96±9	98±5	
Total pregnant females = 14									

Table A-15 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices for
Female Rats Exposed to DBCP by Inhalation

(Bred during week 15 and 16 of the post-exposure period)

Exposure Level: 10 ppm

Animal Number	Ear Number	Litter Size ^a	No. Dead Pups on Day 0	No. Live Pups on Day		Sex Ratio Day 1 M:F	Gestation Survival Index (%)	1-Day Survival Index (%)	Morphological Alterations
				0	1				
77-7628	1306	Did not deliver a litter							
7629	1307	12	— ^c	— ^c	9	3:6	— ^c	— ^c	
7630	1198 ^b	13	0	10	13	8:5	100	100	
7631	1309	15	3	12	12	5:7	80	100	
7632	1310	2	2	0	0	0:0	0	—	
7633	1311	Did not deliver a litter							
7634	1312	Did not deliver a litter							
7635	1313	Did not deliver a litter							
7636	1314	11	0	11	11	6:5	100	100	
7637	1315	15	0	2	11	7:4	73	100	
7638	1316	4	0	4	4	1:3	100	100	
7639	1317	5	2	3	1	1:0	60	33	1 emaciated pup
7640	1318	13	0	13	12	4:8	100	92	3 pups exhibited hypothermia as determined by touch
7641	1319	1	0	1	1	0:1	100	100	
7642	1320	10	0	10	10	4:6	100	100	
7643	1321	Did not deliver a litter							
7644	1322	10	2	8	8	5:3	80	100	
7645	1323	10	— ^c	— ^c	10	3:7	— ^c	— ^c	1M pup exhibited acaudia and imperforate anus
7646	1324	4	0	4	4	1:3	100	100	
7647	1325	14	2	12	12	4:8	86	100	
44:56									
Mean±S.D.		9±5	0.8±1.1	7±5	8±4		83±28	94±19	
Total pregnant females = 15									

[†]Female rats were exposed to 0, 0.1, 1.0 or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. Following termination of exposures (weeks 15 and 16 of the study) each female was housed with two different unexposed male rats, each for a 5-day period.

^aTotal number of pups born, alive plus dead.

^bIn some cases, the litter size was greater on day 1 than on day 0 because the dam was still delivering when the data were recorded on day 0.

^cNo data were collected.

^dAnimal #77-7504 delivered 9 pups on an undetermined day. Since the age of the pups could not be verified, the data from this animal were included in the calculation of % pregnant, and external calculations only.

Table A-16

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices for
Female Rats Exposed to DBCP by Inhalation

(Bred during week 33 and 34 of the post-exposure period)

Exposure Level: 0 ppm

Animal Number	Ear Number	Litter Size ^a	No. Dead Pups on Day 0	No. Live Pups on Day		Sex Ratio M:F	Gestation Survival Index (%)	1-Day Survival Index (%)	Morphological Alterations
				0	1				
77-7419	1201	did not deliver a litter							
7420	1202	did not deliver a litter							
7421	1203	12	1	11	11	6:5	92	100	
7422	1204	1	0	1	1	0:1	100	100	
7423	1205	dead							
7424	1206 ^b	4	0	2	4	4:0	100	100	
7425	1207	did not deliver a litter							
7426	1208	did not deliver a litter							
7427	1209 ^b	10	0	5	9	4:5	100	100	
7428	1210	did not deliver a litter							
7429	1211 ^b	6	1	3	4	0:4	75	100	one pup devoid of milk in stomach
7430	1212	did not deliver a litter							
7431	1213 ^c								
7432	1214	did not deliver a litter							
7433	1215	did not deliver a litter							
7434	1216	did not deliver a litter							
7435	1217	7	0	7	3	2:1	100	43	
7436	1218	did not deliver a litter							
7437	1219	2	0	2	2	0:2	100	100	
7438	1220	did not deliver a litter							
						47:53			
	Mean±S.D.	6±4	0.3±0.5	4±4	5±4		95±9	92±22	

Total pregnant females = 8

Table A-16 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices for
Female Rats Exposed to DBCP by Inhalation

(Bred during week 33 and 34 of the post-exposure period)

Exposure Level: 0.1 ppm

Animal Number	Ear Number	Litter Size ^a	No. Dead Pups on Day 0	No. Live Pups on Day		Sex Ratio M:F	Gestation Survival Index (%)	1-Day Survival Index (%)	Morphological Alterations
				0	1				
77-7489	1236	9	0	9	9	5:4	100	100	
7490	1237	did not deliver a litter							
7491	1238 ^b	10	0	9	10	4:6	100	100	
7492	1239	3	1	2	2	2:0	67	100	one pup appears emaciated
7493	1240	did not deliver a litter							
7494	1241	9	0	9	7	5:2	100	78	
7495	1242	did not deliver a litter							
7596	1243	did not deliver a litter							
7597	1244	12	0	12	11	8:3	100	92	
7498	1245	6	0	6	6	3:3	100	100	
7499	1197	did not deliver a litter							
7500	1247	did not deliver a litter							
7501	1248	2	0	2	2	1:1	100	100	
7502	1249	did not deliver a litter							
7503	1250	did not deliver a litter							
7504	1251	11	0	11	11	8:3	100	100	
7505	1252	13	0	13	13	4:9	100	100	
7506	1253	did not deliver a litter							
7507	1254	did not deliver a litter							
7508	1555	did not deliver a litter							
Mean±S.D.		8±4	0.1±0.3	8±4	8±4	56:44	96±11	97±7	

Total pregnant females = 9

Table A-16 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices for
Female Rats Exposed to DBCP by Inhalation

(Bred during week 33 and 34 of the post-exposure period)

Exposure Level: 1.0 ppm

Animal Number	Ear Number	Litter Size ^a	No. Dead Pups on Day 0	No. Live Pups on Day		Sex Ratio M:F	Gestation Survival Index (%)	1-Day Survival Index (%)	Morphological Alterations
				0	1				
77-7558	1271	did not deliver a litter							
7559	1200	2	2	0	0	0:0	0	—	
7560	1273	15	1	14	14	5:9	93	100	
7561	1274	6	0	6	6	2:4	100	100	
7562	1275	did not deliver a litter							
7563	1276	7	0	7	7	1:6	100	100	
7564	1277	4	0	4	4	2:2	100	100	
7565	1278	did not deliver a litter							
7566	1279 ^d	7	0	1	1	0:1	14	100	one pup exhibited hypothermia as determined by touch, and was devoid of milk in stomach
7567	1280	7	0	7	7	4:3	100	100	
7568	1281	did not deliver a litter							
7569	1282 ^b	8	1	6	7	3:4	88	100	one pup devoid of milk in stomach
7570	1283	3	0	3	3	2:1	100	100	
7571	1284	did not deliver a litter							
7572	1285	did not deliver a litter							
7573	1286	did not deliver a litter							
7574	1287 ^b	9	0	8	9	3:6	100	100	one pup exhibited hypothermia as determined by touch
7575	1288	did not deliver a litter							
7576	1289	5	0	5	5	1:4	100	100	
7577	1290	did not deliver a litter							
Mean±S.D.		7±4	0.4±0.7	6±4	6±4	37:63	89±30	100±0	

Total pregnant females = 11

Table A-16 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Reproductive Parameters-Fertility Index and Survival Indices for
Female Rats Exposed to DBCP by Inhalation

(Bred during week 33 and 34 of the post-exposure period)

Exposure Level: 10 ppm

Animal Number	Ear Number	Litter Size ^a	No. Dead Pups on Day 0	No. Live Pups on Day		Sex Ratio M:F	Gestation Survival Index (%)	1-Day Survival Index (%)	Morphological Alterations
				0	1				
77-7628	1306	2	1	1	1	1:0	50	100	
7629	1307	animal died before delivering							
7630	1198	animal did not deliver a litter							
7631	1309	1	0	1	1	1:0	100	100	
7632	1310	13	0	13	13	4:9	100	100	
7633	1311	animal died before breeding							
7634	1312	did not deliver a litter							
7635	1313	did not deliver a litter							
7636	1314	did not deliver a litter							
7637	1315 ^b	10	0	2	10	5:5	100	100	
7638	1316	did not deliver a litter							
7639	1317	did not deliver a litter							
7640	1318	did not deliver a litter							
7641	1319	3	0	3	3	2:1	100	100	
7642	1320	2	0	2	2	2:0	100	100	
7643	1321	9	0	9	9	5:4	100	100	
7644	1322	12	0	12	11	4:7	100	92	
7645	1323	1	1	0	0	0:0	0	—	
7646	1324	did not deliver a litter							
7647	1325	did not deliver a litter							
48:52									
Mean±S. D.		6±5	0.2±0.4	5±5	6±5		83±35	99±3	

Total pregnant females = 10

[†]Female rats were exposed to 0, 0.1, 1.0 and 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in laboratory for recovery. During weeks 33 and 34 of the study, each female was housed with two different unexposed male rats, each for a 5-day period.

^aTotal number of pups born, alive plus dead.

^bIn some cases, the litter size was greater on day 1 than on day 0 because the dam was still delivering when the data were recorded.

^cAnimal #77-7431 apparently escaped from the cage and delivered a litter in the animal holding room. All pups were dead when they were discovered. Data from this animal were included in the calculation of % pregnant only.

^dAnimal #77-7566 exhibited excessive bleeding and labored delivery prior to death. On day 0, a single pup was delivered, on day 1 of lactation, an additional 6 pups, which were dead at the time of examination were delivered by this female.

DO 131336
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Table A-17

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
HERITABLE TRANSLOCATION STUDY

Individual Observations Made at the Time of Necropsy of Unexposed Female Rats
Mated with F₁ Males of DBCP Exposed Male Rats

Exposure Level: 0 ppm

Animal Number DBCP Exposed Males	Ear Number DBCP Exposed Males	Ear Number F ₁ Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-Imp Loss	$\bar{X}$ Post-Imp Loss
77-7469	1019	2313	3601	16	15	1	3	4
			3602	14	14	0		
7470	1021	2316	3603	13	12	0	10	0
			3604	18	16	0		
7471	1022	2317	3605	17	14	2	18	14
			3606	non-pregnant				
7472	1023	No F ₁ pups (3607, 3608 females were not bred)						
7473	1024	2319	3609	22	15	0	16	3
			3610	15	16	1		
7474	1025	2321	3611	14	16	0	0	0
			3612	non-pregnant				
7475	1026	2324	3613	14	14	1	0	10
			3614	15	15	2		
7476	1027	2326	3615	non-pregnant			0	0
			3616	14	14	0		
7477	1028	2327	3617	12	12	0	0	0
			3618	non-pregnant				
7478	1029	2329	3619	12	12	0	0	0
			3620	15	16	0		
7479	1030	2331	3621	16	18	0	0	4
			3622	11	12	1		
7480	1032	2334	3623	13	12	0	4	0
			3624	14	14	0		
7481	1033	2335	3625	14	13	0	4	7
			3626	14	14	2		
7482	1034	2338	3627	16	14	1	17	10
			3628	19	15	2		
7483	1035	No F ₁ pups (3629, 3630 females were not bred)						
7484	1036	2340	3631	14	16	0	0	4
			3632	13	13	1		
7485	1037	2341	3633	14	14	0	0	0
			3634	14	14	0		
7486	1182	No F ₁ pups (3637, 3638 females were not bred)						
7487	1039	2343	3635	16	15	0	6	0
			3636	14	13	0		
7488	1040	2346	3639	13	13	0	32	50
			3640	8	3	3		

Mean ± S.D.

14 ± 2

14 ± 2

0.6 ± 0.7

6 ± 9

6 ± 12

Total fertile males = 17

DO 131337
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Table A-17 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
HERITABLE TRANSLOCATION STUDY

Individual Observations Made at the Time of Necropsy of Unexposed Female Rats
Mated with F₁ Males of DBCP Exposed Male Rats

Exposure Level: 0.1 ppm

Animal Number DBCP Exposed Males	Ear Number DBCP Exposed Males	Ear Number F ₁ Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-Imp Loss	$\bar{A}$ Post-Imp Loss
77-7539	1057	2201	3641	13	12	0	7	3
			3642	17	16	1		
7540	1058	2204	3643	13	14	0	0	6
			3644	15	16	2		
7541	1059	2206	3645	11	11	0	4	4
			3646	15	14	1		
7542	1060	2208	3647	12	15	1	0	7
			3648	non-pregnant				
7543	1062	2210	3649	non-pregnant			7	8
			3650	14	13	1		
7544	1063	2212	3651	non-pregnant			0	0
			3652	13	15	0		
7545	1064	No F ₁ pups, (3653, 3654 females were not bred)						
7546	1066	2213	3655	non-pregnant				
			3656	non-pregnant				
7547	1066	2215	3657	12	13	2	4	8
			3658	13	12	0		
7548	1068	No F ₁ pups, (3659, 3660 females were not bred)						
7549	1069	2217	3661	12	15	0	6	0
			3662	16	14	0		
7550	1070	2220	3663	non-pregnant			0	6
			3664	16	17	1		
7551	1072	2221	3665	15	15	1	0	4
			3666	12	12	0		
7552	1073	No F ₁ pups, (3667, 3668 females were not bred)						
7553	1074	2223	3669	14	14	0	0	0
			3670	non-pregnant				
7554	1075	2225	3671	18	20	0	0	0
			3672	non-pregnant				
7698	1175	2228	3673	13	15	3	0	10
			3674	14	14	0		
7555	1077	2229	3675	18	18	3	3	12
			3676	17	16	1		
7556	1078	2231	3677	13	15	0	0	8
			3678	12	13	2		
7557	1181	2234	3679	15	16	1	0	3
			3680	16	16	0		
Mean±S.D.				14±2	15±2	0.7±0.6	2±3	5±4

Total fertile males = 16

Table A-17 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
HERITABLE TRANSLOCATION STUDY

Individual Observations Made at the Time of Necropsy of Unexposed Female Rats
Mated with F₁ Males of DBCP Exposed Male Rats

Exposure Level: 1.0 ppm

Animal Number DBCP Exposed Males	Ear Number DBCP Exposed Males	Ear Number F ₁ Male	Ear Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{A}$ Pre-imp Loss	$\bar{A}$ Post-imp Loss
77-7608	1097	2235	3681	15	13	0	18	4
			3682	17	13	1		
7609	1098	2238	3683	16	15	2	10	10
			3684	15	13	1		
7610	1099	2239	3685	17	17	0	0	0
			3686	non-pregnant				
7611	1100	2242	3687	non-pregnant			0	6
			3688	16	16	1		
7612	1101	2243	3689	17	16	1	6	10
			3690	15	14	2		
7613	1102	2245	3691	non-pregnant			8	42
			3692	13	12	5		
7614	1103	No F ₁ pups, (3693, 3694 females were not bred)						
7615	1104	2247	3695	13	13	2	0	15
			3696	non-pregnant				
7616	1105	2250	3697	14	13	0	7	0
			3698	non-pregnant				
7617	1106	2251	3699	14	14	1	3	4
			3700	16	15	0		
7618	1107	2253	3701	non-pregnant			13	8
			3702	15	13	1		
7619	1110	2256	3703	15	14	3	6	14
			3704	16	15	1		
7620	1111	2257	3705	18	14	1	11	7
			3706	14	14	1		
7621	1112	2260	3707	18	11	1	20	4
			3708	12	13	0		
7622	1113	2261	3709	13	10	0	29	9
			3710	17	11	2		
7623	1114	2263	3711	non-pregnant			25	8
			3712	16	12	1		
7624	1115	2266	3713	16	16	1	0	13
			3714	14	15	3		
7625	1116	2268	3715	16	16	0	0	0
			3716	15	15	0		
7626	1117	2270	3717	13	15	0	0	0
			3718	13	13	0		
7627	1118	2271	3719	14	12	0	53	50
			3720	12	1	1		
Mean±S.D.				15±1	13±2	1.1±1.2	11±14	11±13

Total fertile males = 19

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Table A-17 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]
HERITABLE TRANSLOCATION STUDY

Individual Observations Made at the Time of Necropsy of Unexposed Female Rats
Mated with F₁ Males of DBCP Exposed Male Rats

Exposure Level: 10 ppm

Animal Number DBCP Exposed Males	Bar Number DBCP Exposed Males	Bar Number F ₁ Male	Bar Number Female	Corpora Lutea	Implantations	Resorptions	$\bar{X}$ Pre-Impl Loss	$\bar{X}$ Post-Impl Loss
77-7678	1136	2273	3721	14	12	1	22	9
			3722	13	10	1		
7679	1137	2276	3723	14	13	0	10	8
			3724	14	12	2		
7680	1138	2277	3725	13	14	2	0	7
			3726	14	14	0		
7681	1139	2279	3727	15	14	0	4	0
			3728	13	13	0		
7682	1140	2282	3729	12	14	0	22	0
			3730	16	9	0		
7683	1141	2284	3731	15	15	1	0	7
			3732	13	14	1		
7684	1142	2286	3733	13	15	0	0	0
			3734	non-pregnant				
7685	1143	2287	3735	23	15	0	15	0
			3736	17	17	0		
7686	1144	2290	3737	non-pregnant			0	6
			3738	16	17	1		
7687	1145	2291	3739	non-pregnant			0	0
			3740	14	14	0		
7688	1146	2293	3741	14	14	1	6	8
			3742	15	13	1		
7689	1147	2295	3743	non-pregnant			0	9
			3744	11	11	1		
7690	1148	2298	3745	non-pregnant				
			3746	non-pregnant				
7691	1149	2300	3747	non-pregnant			4	0
			3748	11	10	0		
7692	1150	2301	3749	12	15	1	0	7
			3750	non-pregnant				
7693	1151	2303	3751	17	13	0	27	0
			3752	20	14	0		
7694	1152	2305	3753	14	16	1	0	6
			3754	non-pregnant				
7695	1153	2308	3755	non-pregnant				
			3756	non-pregnant				
7696	1154	2309	3757	non-pregnant			31	0
			3758	16	11	0		
7697	1155	2311	3759	non-pregnant			0	0
			3760	15	16	0		
Mean±S.D.				14±2	14±2	0.5±0.5	5±11	4±4

Total fertile males = 18

[†]F₀ male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. During the first week post-exposure, each male rat was housed with an unexposed female rat. F₁ males resulting from this mating were raised to maturity and housed with two unexposed females for 7 days.

The average values for the two unexposed female rats bred to each F₁ male were calculated. Group means were then calculated from the averaged values.

TABLE A-18

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Hematologic Evaluation

Week of Study: -1

Animal Number	ppm DBCP	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count %				
						Neut	Lymph	Mono	Eosin	Baso
77-7454	0	52.0	8.05	15.4	18.5	13	84	1	2	0
7455		53.0	9.82	16.8	15.6	4	95	1	0	0
7456		51.5	8.77	15.9	18.8	4	90	3	3	0
7457		52.0	8.60	17.0	22.0	6	91	3	0	0
7458		50.0	8.02	14.7	26.6	12	84	4	0	0
Mean		51.7	8.65	16.0	20.3	8	89	2	1	0
±S.D.		±1.1	±0.73	±1.0	±4.2					
7524	0.1	50.0	8.78	15.5	21.3	8	87	4	1	0
7525		49.0	8.78	15.7	21.8	6	88	4	2	0
7526		47.0	8.48	15.6	22.3	11	78	9	2	0
7527		51.0	9.83	16.1	23.0	10	85	5	0	0
7528		50.0	9.10	16.5	19.0	9	87	3	1	0
Mean		49.4	8.99	15.9	21.5	9	85	5	1	0
±S.D.		±1.5	±0.52	±0.4	±1.5					
7593	1.0	49.5	8.74	16.5	21.0	13	86	0	1	0
7594		49.0	8.55	15.8	22.0	16	81	3	0	0
7595		50.0	8.91	16.1	17.8	7	93	0	0	0
7596		49.0	8.99	16.3	20.9	12	85	2	1	0
7597		50.0	8.99	16.4	17.7	4	96	0	0	0
Mean		49.5	8.84	16.2	19.9	10	88	1	1	0
±S.D.		±0.5	±0.19	±0.3	±2.0					
7668	10.0	47.0	8.45	15.4	15.6	14	80	5	1	0
7669		47.0	8.82	15.4	22.2	6	88	1	5	0
7670		45.0	8.58	15.8	17.8	6	90	1	3	0
7671		50.0	9.03	16.0	13.2	6	90	2	2	0
7672		52.0	9.04	16.6	19.0	3	91	3	3	0
Mean		48.2	8.78	15.8	17.6	7	88	2	3	0
±S.D.		±2.8	±0.26	±0.5	±3.4					

TABLE A-19

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Hematologic Evaluation

Week of Study: -1

Animal Number	ppm DBCP	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count %				
						Neut	Lymph	Mono	Eosin	Baso
77-7444	0	46.5	8.27	15.1	13.7	4	90	2	4	0
7445		47.0	7.28	14.2	17.4	17	79	3	1	0
7446		46.0	7.84	14.4	22.0	4	96	0	0	0
7447		47.5	8.23	15.5	11.0	6	92	2	0	0
7448		46.0	8.11	14.6	13.7	3	90	5	2	0
Mean		46.6	7.95	14.8	15.6	7	90	2	1	0
±S.D.		±0.7	±0.41	±0.5	±4.3					
7514	0.1	43.5	7.56	13.8	14.0	7	89	2	2	0
7515		45.0	8.10	15.6	11.8	8	87	2	3	0
7516		48.0	8.30	15.9	12.8	6	93	1	0	0
7517		44.0	7.22	13.7	12.4	14	86	0	0	0
7518		46.0	7.90	15.1	12.7	10	86	0	4	0
Mean		45.3	7.82	14.8	12.7	9	88	1	2	0
±S.D.		±1.8	±0.43	±1.0	±0.8					
7583	1.0	48.0	8.02	15.9	12.0	3	96	0	1	0
7584		47.5	8.91	15.5	12.9	7	89	4	0	0
7585		52.0	7.64	14.7	11.5	6	94	0	0	0
7586		49.5	8.84	16.6	9.6	10	88	0	2	0
7587		46.0	7.71	15.0	9.6	5	93	0	2	0
Mean		48.6	8.22	15.5	11.1	6	92	1	1	0
±S.D.		±2.3	±0.61	±0.8	±1.5					
7653	10.0	47.0	8.73	15.8	10.4	19	79	1	1	0
7654		47.0	7.93	15.2	11.3	4	95	0	1	0
7655		54.0	9.51	17.9	13.6	3	96	1	0	0
7656		50.0	8.29	16.2	14.0	9	90	0	1	0
7657		47.0	8.96	15.7	8.5	8	90	1	1	0
Mean		49.0	8.68	16.2	11.6	8	90	1	1	0
±S.D.		±3.1	±0.61	±1.0	±2.3					

TABLE A-19 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Hematologic Evaluation

Week of Study: 9

Animal Number	ppm DBCP	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count %				
						Neut	Lymph	Mono	Eosin	Baso
77-7444	0	49.0	8.37	15.5	10.8	7	90	1	2	0
7445		54.0	9.14	17.9	8.8	10	89	0	1	0
7446		48.0	8.41	15.7	11.3	11	86	3	0	0
7447		48.5	8.62	16.0	10.3	7	91	1	1	0
7448		49.0	7.99	15.2	9.8	22	75	2	1	0
Mean		49.7	8.51	16.1	10.2	12	86	1	1	0
±S.D.		±2.4	±0.42	±1.1	±1.0					
7514	0.1	46.0	8.12	15.1	9.8	6	87	4	3	0
7515		45.0	7.65	15.6	9.8	9	88	2	1	0
7516		53.0	8.88	17.3	10.6	17	83	0	0	0
7517		50.5	8.66	16.8	9.4	27	63	6	4	0
7518		45.0	7.46	15.1	6.5	17	78	1	4	0
Mean		47.9	8.15	16.0	9.2	15	80	3	2	0
±S.D.		±3.6	±0.62	±1.0	±1.6					
7583	1.0	51.0	7.43	15.6	12.0	8	87	5	0	0
7584		50.0	8.37	16.2	10.5	8	90	1	1	0
7585		50.0	8.02	16.4	10.8	9	90	1	0	0
7586		53.0	8.21	16.3	16.2	7	91	1	1	0
7587		47.0	7.43	15.4	10.1	12	85	2	1	0
Mean		50.2	7.89	16.0	11.9	9	88	2	1	0
±S.D.		±2.2	±0.43	±0.4	±2.5					
7653	10.0	50.0	8.78	16.1	13.0	10	86	1	3	0
7654		50.0	7.80	15.8	18.9	10	86	1	3	0
7655		52.0	8.32	16.4	14.9	8	87	2	3	0
7656		48.0	7.83	15.3	13.0	22	75	0	3	0
7657		47.0	7.85	15.7	10.7	7	91	1	1	0
Mean		49.4	8.12	15.9	14.1	11	85	1	3	0
±S.D.		±1.9	±0.43	±0.4	±3.1					

TABLE A-19 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

Female Rat: Hematologic Evaluation

Week of Study: 13

Animal Number	ppm DBCP	PCV %	RBC x 10 ⁶ /mm ³	Hgb g/100 ml	WBC x 10 ³ /mm ³	WBC Differential Count %				
						Neut	Lymph	Mono	Eosin	Baso
77-7444	0	47.0	8.17	15.7	9.8	7	92	1	0	0
7445		50.0	8.17	17.1	8.9	9	88	0	3	0
7446		43.0	7.51	14.7	19.4	16	77	2	5	0
7447		52.0	7.90	15.6	17.5	19	77	2	2	0
7448		50.0	8.67	17.2	12.4	7	91	0	2	0
Mean		48.4	8.08	16.1	13.6	12	85	1	2	0
±S.D.		±3.5	±0.42	±1.1	±4.7					
7514	0.1	48.0	8.37	15.3	13.2	9	86	4	1	0
7515		47.0	8.00	15.8	9.0	20	79	0	1	0
7516		52.5	8.16	17.0	14.0	11	87	0	2	0
7517		47.0	7.85	15.7	11.7	17	80	1	2	0
7518		48.0	7.99	16.2	7.6	10	88	0	2	0
Mean		48.5	8.07	16.0	11.1	13	84	1	2	0
±S.D.		±2.3	±0.19	±0.6	±2.7					
7583	1.0	49.5	7.76	16.5	12.4	6	91	2	1	0
7584		47.0	8.02	15.5	10.5	11	85	0	4	0
7585		54.5	8.56	17.7	8.4	14	85	1	0	0
7586		51.0	8.11	16.7	15.5	16	75	4	5	0
7587		47.0	7.32	15.6	11.4	8	90	2	2	0
Mean		49.8	7.95	16.4	11.6	11	85	2	2	0
±S.D.		±3.1	±0.46	±0.9	±2.6					
7653	10.0	51.0	8.41	17.3	9.3	11	83	4	2	0
7654		49.0	8.75	16.9	11.8	22	69	3	6	0
7655		52.0	8.45	17.7	17.2	16	78	3	3	0
7656		47.0	7.85	16.2	13.8	7	93	0	0	0
7657		46.5	8.65	16.5	8.9	16	81	2	1	0
Mean		49.1	8.42	16.9	12.2	15	81	2	2	0
±S.D.		±2.4	±0.35	±0.6	±3.4					

†Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

TABLE A-20

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male and Female Rats: Prothrombin Time

Male Rats				Female Rats			
Animal Number	ppm DBCP	Prothrombin Time (seconds)		Animal Number	ppm DBCP	Prothrombin Time (seconds)	
		9 weeks	13 weeks			9 weeks	13 weeks
77-7454	0	24.3	14.2	77-4444	0	23.6	15.1
7455		19.2	15.8	7445		29.6	15.6
7456		18.2	— ^a	7446		35.1	16.6
7457		13.8	15.3	7447		35.8	16.1
7458		20.6	14.1	7448		33.1	14.6
Mean ± S.D.		19.2 ± 3.8	14.9 ± 0.8	Mean ± S.D.		31.4 ± 5.0	15.6 ± 0.8
7524	0.1	30.3	15.8	7514	0.1	13.8	14.6
7525		15.1	18.6	7515		18.3	16.6
7526		21.8	13.3	7516		25.1	18.1
7527		20.8	15.1	7517		21.6	15.3
7528		19.8	15.3	7518		22.1	17.8
Mean ± S.D.		21.6 ± 5.5	15.6 ± 1.9	Mean ± S.D.		20.2 ± 4.3	16.5 ± 1.5
7593	1.0	23.3	13.3	7583	1.0	20.8	16.5
7594		30.1	15.9	7584		17.1	15.8
7595		21.1	14.9	7585		19.3	16.1
7596		15.6	16.3	7586		19.6	14.3
7597		27.1	18.6	7587		18.1	16.1
Mean ± S.D.		23.4 ± 5.6	15.8 ± 1.9	Mean ± S.D.		19.0 ± 1.4	15.8 ± 0.9
7668	10.0	16.1	14.3	7653	10.0	25.1	11.8
7669		16.3	13.4	7654		27.3	15.1
7670		39.5	14.1	7655		28.1	15.6
7671		18.1	16.1	7656		31.1	16.5
7672		— ^a	12.3	7657		54.2	14.1
Mean ± S.D.		22.5 ± 11.4	14.0 ± 1.4	Mean ± S.D.		33.2 ± 11.9	14.6 ± 1.8

[†]Data were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aData not available, blood sample clotted.

TABLE A-21

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male and Female Rat: Clinical Chemistry Values

Male Rats (14th Week)					Female Rats (14th Week)				
Animal Number	ppm DBCP	BUN, mg/100 ml	SQPT, ml/ml	AP, ml/ml	Animal Number	ppm DBCP	BUN, mg/100 ml	SQPT, ml/ml	AP, ml/ml
77-7454	0	16	28	52	77-7444	0	16	20	36
7455		20	29	65	7445		16	15	46
7456		18	25	67	7446		21	23	74
7457		20	23	52	7447		18	20	42
7458		16	23	54	7448		16	17	36
Mean ± S.D.		18 ± 2	26 ± 3	58 ± 7	Mean ± S.D.		17 ± 2	19 ± 3	47 ± 16
77-7524	0.1	19	25	60	77-7514	0.1	18	17	38
7525		20	103	232	7515		14	14	49
7526		20	30	54	7516		13	16	48
7527		19	24	46	7517		20	14	38
7528		16	23	49	7518		18	21	33
Mean ± S.D.		19 ± 2	41 ± 35	88 ± 80	Mean ± S.D.		17 ± 3	16 ± 3	41 ± 7
77-7593	1.0	18	24	66	77-7583	1.0	15	19	39
7594		15	24	37	7584		17	20	29
7595		17	36	58	7585		19	17	31
7596		14	27	48	7586		19	15	35
7597		14	36	83	7587		17	19	30
Mean ± S.D.		16 ± 2	29 ± 6	58 ± 18	Mean ± S.D.		17 ± 2	18 ± 2	33 ± 4
77-7668	10.0	14	23	82	77-7652	10.0	18	22	53
7669		14	31	64	7654		18	14	65
7670		22	31	73	7655		15	19	34
7671		17	23	63	7656		15	33	81
7672		17	30	53	7657		16	23	45
Mean ± S.D.		17 ± 3	28 ± 4	67 ± 11	Mean ± S.D.		16 ± 2	22 ± 7	56 ± 18

[†]Rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

Table A-22

DBCP INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: FSH and Testosterone levels

Week of Study	Animal Number	ppm DBCP	FSH(nanogram/ml)	Testosterone(nanogram/ml)
4	77-7464	0	400	1.6
	7465		306	2.7
	7466		266	2.4
	7467		293	8.0
	7468		280	3.0
	Mean±S.D.		309±53	3.5±2.5
	77-7534	0.1	320	4.9
	7535		333	2.7
	7536		320	2.7
	7537		233	1.2
	7538		416	2.3
	Mean±S.D.		324±65	2.8±1.3
	77-7603	1.0	266	6.4
	7604		233	3.2
	7605		233	2.8
	7606		350	2.2
	7607		333	2.3
	Mean±S.D.		283±55	3.4±1.7
	77-7673	10.0	383	6.8
	7674		450	3.5
	7675		433	1.4
	7676		375	5.1
	7677		320	4.9
	Mean±S.D.		392±51	4.3±2.0
14	77-7454	0	193	0.6
	7455		533	0.6
	7456		200	0.8
	7457		333	1.2
	7458		226	0.4
	Mean±S.D.		297±143	0.7±0.3
	77-7524	0.1	220	1.6
	7525		233	0.9
	7526		180	1.0
	7527		206	4.0
	7528		233	3.4
	Mean±S.D.		214±22	2.2±1.4
	77-7593	1.0	306	2.6
	7594		333	3.3
	7595		320	0.7
	7596		266	0.6
	7597		280	2.5
	Mean±S.D.		301±28	1.9±1.2
	77-7668	10.0	383	0.6
	7669		333	0.4
	7670		280	0.7
	7671		383	2.7
	7672		293	0.4
	Mean±S.D.		334±48	1.0±1.0

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

Table A-23

DBCP INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: FSH levels

<u>Week of Study</u>	<u>Animal Number</u>	<u>ppm DBCP</u>	<u>FSH(nanogram/ml)</u>
4	77-7449	0	113
	7450		173
	7451		113
	7452		173
	7453		147
	Mean±S.D.		144±30
	77-7519	0.1	147
	7520		113
	7521		157
	7522		127
	7523		193
	Mean±S.D.		147±31
	77-7588	1.0	383
	7589		193
	7590		133
	7591		127
	7592		140
	Mean±S.D.		195±108
	77-7658	10.0	167
	7659		167
	7660		333
	7661		206
	7662		173
	Mean±S.D.		209±71
14	77-7444	0	100
	7445		83
	7446		133
	7447		120
	7448		157
	Mean±S.D.		119±29
	77-7514	0.1	167
	7515		280
	7516		226
	7517		87
	7518		120
	Mean±S.D.		176±78
	77-7583	1.0	113
	7584		100
	7585		70
	7586		140
	7587		157
	Mean±S.D.		116±34
	77-7652	10.0	167
	7653		147
	7654		120
	7655		167
	7656		100
	Mean±S.D.		140±30

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

TABLE A-24

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

Male Rat: Urinalysis

Week of Study: 9

Animal Number	ppm DBCP	Specific Gravity	pH	Sugar	Protein	Ketones	Bilirubin	Blood	Urobilinogen
77-7454	0	1.040	6.5	Neg	2+	Neg	Neg	Neg	1.0
7455		1.044	6.0	Neg	1+	Neg	Neg	Neg	1.0
7456		1.042	7.0	Neg	1+	Neg	Neg	Neg	1.0
7457		1.040	7.0	Neg	3+	Neg	Neg	Neg	1.0
7458		Unable to obtain a sample							
Mean±S. D.		1.042±0.002							
7524	0.1	Unable to obtain a sample							
7525		1.032	6.5	Neg	1+	Neg	Neg	Neg	1.0
7526		Unable to obtain a sample							
7527		1.056	6.0	Neg	3+	Neg	Neg	Neg	1.0
7528		1.040	7.0	Neg	3+	Neg	Neg	Neg	1.0
Mean±S. D.		1.043±0.012							
7593	1.0	Unable to obtain a sample							
7594		1.058	7.0	Neg	2+	Neg	Neg	Neg	1.0
7595		1.066	6.5	Neg	3+	Neg	Neg	Neg	1.0
7596		1.052	7.0	Neg	2+	Neg	Neg	Neg	1.0
7597		1.064	6.0	Neg	2+	Neg	Neg	Neg	1.0
Mean±S. D.		1.060±0.006							
7668	10.0	Unable to obtain a sample							
7669		1.030	7.0	Neg	2+	Neg	Neg	Neg	1.0
7670		1.028	6.5	Neg	1+	Neg	Neg	Neg	1.0
7671		1.040	6.5	Neg	3+	Neg	Neg	Neg	1.0
7672		Unable to obtain a sample							
Mean±S. D.		1.033±0.006							

TABLE A-24 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Urinalysis

Week of Study: 13

Animal Number	ppm DBCP	Specific Gravity	pH	Sugar	Protein	Ketones	Bilirubin	Blood	Urobilinogen
77-7454	0	Unable to obtain a sample							
7455		1.050	6.5	Neg	1+	Neg	Neg	Neg	1.0
7456		1.060	6.0	Neg	1+	Neg	Neg	Neg	1.0
7457		1.040	7.0	Neg	3+	Neg	Neg	Neg	1.0
7458		Unable to obtain a sample							
Mean±S.D.		1.050±0.010							
7524	0.1	Unable to obtain a sample							
7525		Unable to obtain a sample							
7526		Unable to obtain a sample							
7527		1.070	6.0	Neg	3+	Neg	Neg	Neg	1.0
7528		1.038	6.5	Neg	2+	Neg	Neg	Small	1.0
Mean±S.D.		1.054±0.023							
7593	1.0	Unable to obtain a sample							
7594		Unable to obtain a sample							
7595		1.054	6.5	Neg	3+	Neg	Neg	Neg	1.0
7596		1.066	7.0	Neg	3+	Neg	Neg	Neg	1.0
7597		1.040	7.0	Neg	3+	Neg	Neg	Neg	1.0
Mean±S.D.		1.053±0.013							
7668	10.0	Unable to obtain a sample							
7669		1.038	6.5	Neg	2+	Neg	Neg	Neg	1.0
7670		1.024	6.5	Neg	1+	Neg	Neg	Neg	1.0
7671		1.052	7.0	Neg	4+	Neg	Neg	Neg	1.0
7672		1.022	6.5	Neg	1+	Neg	Neg	Neg	1.0
Mean±S.D.		1.034±0.014							

TABLE A-24 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Urinalysis

Week of Study: 14^a

Animal Number	ppm DBCP	Specific Gravity	pH	Sugar	Protein	Ketones	Bilirubin	Blood	Urobilinogen
77-7454	0	1.007	7.0	Neg	3+	Neg	Neg	Neg	1.0
7455		1.010	6.0	Neg	1+	Neg	Neg	Neg	1.0
7456		1.035	6.0	Neg	3+	Neg	Neg	Neg	1.0
7457		1.007	7.0	Neg	3+	Neg	Neg	Neg	1.0
7458		1.004	7.0	Neg	Trace	Neg	Neg	Trace	1.0
Mean±S.D.		1.013±0.013							
7524	0.1	1.044	6.0	Neg	3+	Neg	Neg	Neg	1.0
7525		1.037	8.0	Neg	3+	Neg	Neg	Neg	1.0
7526		1.054	7.0	Neg	3+	Neg	Neg	Neg	1.0
7527		1.052	6.0	Neg	3+	Neg	Neg	Neg	1.0
7528		1.050	6.0	Neg	3+	Neg	Neg	Neg	1.0
Mean±S.D.		1.047±0.007							
7593	1.0	1.050	6.0	Neg	3+	Neg	Neg	Neg	1.0
7594		1.024	8.0	Neg	2+	Neg	Neg	Neg	1.0
7595		1.036	6.0	Neg	3+	Neg	Neg	Neg	1.0
7596		Unable to obtain a sample							
7597		1.026	8.0	Neg	3+	Neg	Neg	Neg	1.0
Mean±S.D.		1.034±0.012							
7668	10.0	1.024	7.0	Neg	3+	Neg	Neg	Neg	1.0
7669		1.013	8.0	Neg	3+	Neg	Neg	Neg	1.0
7670		1.010	6.0	Neg	2+	Neg	Neg	Neg	1.0
7671		1.016	6.0	Neg	3+	Neg	Neg	Neg	1.0
7672		1.026	7.0	Neg	3+	Neg	Neg	Neg	1.0
Mean±S.D.		1.018±0.007							

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aDue to difficulty in obtaining urine samples from male rats during the 13th week, additional urine samples were obtained at the time of necropsy in the 14th week.

TABLE A-25 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Urinalysis

Week of Study: 13

Animal Number	ppm DBCP	Specific Gravity	pH	Sugar	Protein	Ketones	Bilirubin	Blood	Urobilinogen
77-7444	0	1.030	6.5	Neg	Trace	Neg	Neg	Neg	1.0
7445		1.020	6.0	Neg	2+	Neg	Neg	Neg	1.0
7446		1.030	6.5	Neg	1+	Neg	Neg	Neg	1.0
7447		1.048	6.0	Neg	2+	Neg	Neg	Neg	1.0
7448		1.032	7.0	Neg	Trace	Neg	Neg	Neg	1.0
Mean±S.D.		1.032±0.010							
7514	0.1	1.026	6.0	Neg	Trace	Neg	Neg	Neg	1.0
7515		1.054	6.0	Neg	1+	Neg	Neg	Neg	1.0
7516		1.050	6.0	Neg	2+	Neg	Neg	Neg	1.0
7517		1.034	6.5	Neg	Trace	Neg	Neg	Neg	1.0
7518		1.046	6.0	Neg	3+	Neg	Neg	Neg	1.0
Mean±S.D.		1.042±0.012							
7583	1.0	1.028	7.0	Neg	Trace	Neg	Neg	Neg	1.0
7584		1.042	5.0	Neg	Trace	Neg	Neg	Neg	1.0
7585		1.038	7.0	Neg	3+	Neg	Neg	Neg	1.0
7586		1.030	6.0	Neg	1+	Neg	Neg	Neg	1.0
7587		1.028	6.0	Neg	1+	Neg	Neg	Neg	1.0
Mean±S.D.		1.033±0.006							
7653	10.0	1.040	5.0	Neg	Trace	Neg	Neg	Neg	1.0
7654		1.038	6.0	Neg	1+	Neg	Neg	Neg	1.0
7655		1.036	6.0	Neg	2+	Neg	Neg	Neg	1.0
7656		1.040	6.0	Neg	2+	Neg	Neg	Neg	1.0
7657		1.028	6.5	Neg	2+	Neg	Neg	Neg	1.0
Mean±S.D.		1.036±0.005							

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks.. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

Table A-26

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Interim (4 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)											
			BRAIN		HEART		LIVER		KIDNEYS		TESTES		EPIDIDYIMIDES	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7464	0.0	569.0	1.94	0.34	1.65	0.29	19.28	3.39	4.12	0.72	4.31	0.76	— ^a	— ^a
7465		573.0	1.95	0.34	1.83	0.32	21.33	3.72	3.92	0.68	4.60	0.80	1.60	0.28
7466		569.0	2.05	0.36	1.57	0.28	20.42	3.59	4.08	0.72	4.49	0.79	1.58	0.28
7467		502.0	2.00	0.40	1.56	0.31	17.17	3.42	3.86	0.77	4.21	0.84	1.47	0.29
7468		492.0	2.01	0.41	1.54	0.31	18.80	3.82	3.90	0.79	4.22	0.86	1.63	0.33
Mean		541.0	1.99	0.37	1.63	0.30	19.40	3.59	3.98	0.74	4.37	0.81	1.57	0.29
±S.D.		±40.4	±0.05	±0.03	±0.12	±0.02	±1.59	±0.19	±0.12	±0.04	±0.17	±0.04	±0.06	±0.02
77-7534	0.1	495.0	1.96	0.40	1.42	0.29	16.36	3.31	3.29	0.66	4.20	0.85	1.51	0.31
7535		550.0	1.91	0.35	1.87	0.34	19.53	3.55	3.76	0.68	4.23	0.77	1.37	0.25
7536		555.0	2.05	0.37	1.68	0.30	18.15	3.27	3.56	0.64	4.06	0.73	1.55	0.28
7537		487.0	1.90	0.39	1.34	0.28	14.25	2.93	2.94	0.60	4.42	0.91	1.48	0.30
7538		559.0	2.06	0.37	1.63	0.29	20.32	3.64	4.30	0.77	4.23	0.76	1.54	0.28
Mean		529.2	1.98	0.37	1.59	0.30	17.72	3.34	3.57	0.67	4.23	0.80	1.49	0.28
±S.D.		±35.1	±0.08	±0.02	±0.21	±0.02	±2.46	±0.28	±0.51	±0.06	±0.13	±0.07	±0.07	±0.02
77-7603	1.0	608.0	2.10	0.35	1.59	0.26	25.10	4.13	3.99	0.66	4.20	0.69	1.43	0.24
7604		518.0	1.96	0.38	1.46	0.28	18.23	3.52	3.51	0.68	3.98	0.77	1.42	0.27
7605		527.0	1.91	0.36	1.55	0.29	18.91	3.59	3.40	0.65	3.94	0.75	1.30	0.25
7606		497.0	2.06	0.41	1.44	0.29	17.09	3.44	3.80	0.76	3.95	0.79	1.48	0.30
7607		529.0	1.98	0.37	1.51	0.29	18.69	3.53	3.99	0.75	3.80	0.72	1.54	0.29
Mean		535.8	2.00	0.37	1.51	0.28	19.60	3.64	3.74	0.70	3.97	0.74	1.43	0.27
±S.D.		±42.3	±0.08	±0.03	±0.06	±0.01	±3.15	±0.28	±0.27	±0.06	±0.14	±0.04	±0.09	±0.03
77-7673	10.0	519.0	2.11	0.41	1.49	0.29	18.73	3.61	3.61	0.70	4.29	0.83	1.64	0.32
7674		471.0	1.92	0.41	1.47	0.31	17.83	3.79	3.78	0.80	4.17	0.89	1.50	0.32
7675		466.0	1.94	0.42	1.25	0.27	18.63	4.00	3.79	0.81	4.04	0.87	1.48	0.32
7676		488.0	2.06	0.42	1.51	0.31	18.04	3.70	3.32	0.68	4.15	0.85	1.38	0.28
7677		534.0	2.10	0.39	1.54	0.29	20.81	3.90	4.15	0.78	4.10	0.77	1.57	0.29
Mean		495.6	±2.03	±0.41	±1.45	±0.29	±18.81	±3.80	±3.73	±0.75	±4.15	±0.84	±1.51	±0.31
±S.D.		±29.8	±0.09	±0.01	±0.12	±0.02	±1.18	±0.15	±0.30	±0.06	±0.09	±0.05	±0.10	±0.02

Table A-26 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Interim (14 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)											
			BRAIN		HEART		LIVER		KIDNEYS		TESTES		EPIDIDYIMIDES	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7454	0.0	468.3	1.95	0.42	1.50	0.32	14.65	3.13	3.58	0.76	4.46	0.95	1.46	0.31
7455		506.1	2.00	0.40	1.54	0.30	13.33	2.63	3.32	0.66	1.68 ^b	0.33 ^b	0.98 ^b	0.19 ^b
7456		528.4	1.97	0.37	1.48	0.28	13.89	2.63	3.29	0.62	4.26	0.81	1.43	0.27
7457		586.6	2.00	0.34	1.77	0.30	16.67	2.84	4.19	0.71	3.74	0.64	1.64	0.28
7458		494.2	2.01	0.41	1.54	0.31	12.45	2.52	3.12	0.63	3.71	0.75	1.27	0.26
Mean ±S.D.		516.7 ±44.7	1.99 ±0.03	0.39 ±0.03	1.57 ±0.12	0.30 ±0.01	14.20 ±1.60	2.75 ±0.24	3.50 ±0.42	0.68 ±0.06	4.04 ±0.38	0.79 ±0.13	1.45 ±0.15	0.28 ±0.02
77-7524	0.1	461.8	1.96	0.42	1.46	0.32	11.53	2.50	3.24	0.70	4.04	0.87	1.49	0.32
7525		538.8	2.03	0.38	1.59	0.30	15.43	2.86	3.63	0.67	4.05	0.75	1.50	0.28
7526		529.7	1.94	0.37	1.85	0.35	13.66	2.58	3.81	0.72	4.16	0.79	1.41	0.27
7527		578.9	2.05	0.35	1.88	0.32	16.16	2.79	4.48	0.77	4.35	0.75	1.58	0.27
5828		578.1	2.08	0.36	1.56	0.27	14.10	2.44	3.41	0.59	4.15	0.72	1.49	0.26
Mean ±S.D.		537.5 ±47.8	2.01 0.06	0.38 ±0.03	1.67 ±0.19	0.31 ±0.03	14.18 ±1.79	2.63 ±0.19	3.71 ±0.48	0.69 ±0.07	4.15 ±0.12	0.78 ±0.06	1.49 ±0.06	0.28 ±0.03
77-7593	1.0	550.6	2.10	0.38	1.55	0.28	16.53	3.00	4.49	0.82	4.20	0.76	1.53	0.28
7594		526.5	2.06	0.39	1.94	0.37	14.36	2.73	3.92	0.74	4.52	0.86	1.57	0.30
7595		491.6	1.87	0.38	1.79	0.36	13.51	2.75	3.42	0.70	3.94	0.80	1.38	0.28
7596		544.7	2.13	0.39	1.66	0.30	14.42	2.65	3.70	0.68	4.14	0.76	1.46	0.27
7597		498.4	1.97	0.40	1.50	0.30	13.00	2.61	3.26	0.65	4.17	0.84	1.52	0.30
Mean ±S.D.		522.4 ±26.6	2.03 ±0.11	0.39 ±0.01	1.69 ±0.18	0.32 ±0.04	14.36 ±1.35	2.75 ±0.15	3.76 ±0.48	0.72 ±0.06	4.19 ±0.21	0.80 ±0.04	1.49 ±0.07	0.29 ±0.02
77-7668	10.0	468.8	1.93	0.41	1.52	0.32	12.89	2.75	4.15	0.89	2.48	0.53	1.01	0.22
7669		507.6	1.83	0.36	1.43	0.28	15.64	3.08	3.83	0.75	2.77	0.55	1.14	0.22
7670		483.6	1.98	0.41	1.43	0.30	14.91	3.08	3.67	0.76	2.82	0.58	1.11	0.23
7671		481.5	1.96	0.41	1.49	0.31	14.81	3.08	3.84	0.80	2.53	0.53	1.18	0.25
7672		517.8	1.94	0.37	1.55	0.30	16.64	3.21	4.38	0.85	2.93	0.57	1.22	0.24
Mean ±S.D.		491.9 ±20.2	1.93 ±0.06	0.39 ±0.02	1.48 ±0.05	0.30 ±0.02	14.98 ±1.38	3.04 ±0.17	3.97 ±0.29	0.81 ±0.06	2.71 ±0.19	0.55 ±0.02	1.13 ±0.08	0.23 ±0.01

Table A-26 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Terminal (46 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)										EPIDIDYMIDES	
			BRAIN		HEART		LIVER		KIDNEYS		TESTES			
			g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7469	0.0	601	2.10	0.35	2.07	0.34	20.36	3.39	6.00	1.00	4.48	0.75	1.64	0.27
7470		575	1.99	0.35	1.69	0.29	17.11	2.98	4.44	0.77	4.10	0.71	1.45	0.25
7472		597	2.01	0.34	1.78	0.30	19.82	3.32	5.33	0.89	4.64	0.78	1.49	0.25
7473		560	2.00	0.36	1.75	0.31	16.09	2.87	4.11	0.73	4.12	0.74	1.50	0.27
7474		618	2.07	0.34	1.94	0.31	16.13	2.61	4.81	0.78	4.38	0.71	1.67	0.27
7475		520	1.94	0.37	1.68	0.32	20.07	3.86	7.29	1.40	3.60	0.69	1.48	0.28
7476		558	2.06	0.37	1.89	0.34	15.91	2.85	4.47	0.80	4.48	0.80	1.87	0.34
7478		624	2.14	0.34	2.08	0.33	14.39	2.31	4.06	0.65	4.78	0.77	1.72	0.28
7479		619	2.09	0.34	1.69	0.27	18.01	2.91	4.79	0.77	4.85	0.78	1.82	0.29
7480		596	2.05	0.34	2.03	0.34	19.93	3.34	5.01	0.84	4.04	0.68	1.63	0.27
7481		601	2.13	0.35	1.80	0.30	21.21	3.53	6.08	1.01	4.71	0.78	4.28 ^a	0.71 ^a
7482		619	2.10	0.34	1.75	0.28	23.63	3.82	5.60	0.90	4.63	0.75	1.64	0.26
7483		661	2.16	0.33	2.02	0.31	22.69	3.43	4.96	0.75	4.78	0.72	1.72	0.26
7484		618	2.09	0.34	1.73	0.28	21.17	3.43	4.62	0.75	4.26	0.69	1.77	0.29
7485		712	2.11	0.30	2.02	0.28	21.89	3.07	5.14	0.72	4.41	0.62	1.84	0.26
7486		654	2.02	0.31	1.87	0.29	21.76	3.33	5.02	0.77	4.52	0.69	1.79	0.27
7488		580	1.96	0.34	1.75	0.30	17.85	3.08	4.17	0.72	4.22	0.73	1.60	0.28
Mean		607	2.06	0.34	1.86	0.31	19.30	3.18	5.05	0.84	4.41	0.73	1.66	0.27
±S.D.		±44	±0.06	±0.02	±0.14	±0.02	±2.70	±0.41	±0.83	±0.17	±0.33	±0.05	±0.14	±0.02
77-7539	0.1	665	2.09	0.31	1.68	0.25	20.63	3.10	5.43	0.82	4.39	0.66	1.68	0.25
7540		675	2.01	0.30	1.74	0.26	17.00	2.52	4.25	0.63	4.95	0.73	1.67	0.25
7541		636	2.09	0.33	1.72	0.27	19.91	3.13	4.66	0.73	4.42	0.70	1.58	0.25
7542		579	2.10	0.36	1.65	0.28	17.48	3.02	4.31	0.74	4.64	0.80	1.80	0.31
7543		633	2.13	0.34	1.93	0.30	19.36	3.06	5.29	0.84	4.58	0.72	1.87	0.30
7544		602	2.11	0.35	1.67	0.28	18.26	3.03	4.37	0.73	4.81	0.80	1.75	0.29
7545		649	2.17	0.33	2.00	0.31	19.51	3.01	4.93	0.76	4.46	0.69	1.48	0.23
7546		642	2.07	0.32	1.73	0.27	17.60	2.74	4.44	0.69	4.55	0.71	1.56	0.24
7547		642	2.15	0.33	1.93	0.30	20.26	3.16	4.61	0.72	5.22	0.81	1.91	0.30
7548		669	2.15	0.32	1.92	0.29	21.33	3.19	5.65	0.84	4.96	0.74	1.89	0.28
7549		656	2.04	0.31	2.11	0.32	23.01	3.51	5.78	0.88	4.18	0.64	1.58	0.24
7550		640	1.95	0.30	1.71	0.27	21.42	3.35	5.03	0.79	4.32	0.68	1.69	0.26
7551		682	2.15	0.32	1.81	0.27	17.90	2.62	4.42	0.65	4.88	0.72	1.90	0.28
7552		637	2.02	0.32	1.90	0.30	22.73	3.57	5.71	0.90	4.42	0.69	1.83	0.29
7553		576	2.08	0.36	1.98	0.34	16.60	2.88	4.44	0.77	5.28	0.92	2.03	0.35
7554		717	2.08	0.29	2.09	0.29	25.40	3.54	5.39	0.75	5.01	0.70	1.84	0.26
7698		660	2.06	0.31	1.81	0.27	22.34	3.38	6.03	0.91	3.91	0.59	1.66	0.25
7555		693	2.05	0.30	2.04	0.29	20.75	2.99	5.54	0.80	4.38	0.63	1.80	0.26
7556		622	1.99	0.32	1.85	0.30	15.49	2.49	4.44	0.71	4.05	0.65	1.66	0.27
Mean		646	2.08	0.32	1.86	0.29	19.84	3.07	4.99	0.77	4.60	0.71	1.75	0.27
±S.D.		±36	±0.06	±0.02	±0.15	±0.02	±2.54	±0.32	±0.59	±0.08	±0.38	±0.08	±0.14	±0.03

Table A-26 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Male Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Terminal (46 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)											
			BRAIN		HEART		LIVER		KIDNEYS		TESTES		EPIDIDYIMIDES	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7608	1.0	623	2.05	0.33	1.92	0.31	19.94	3.20	5.16	0.83	4.42	0.71	1.69	0.27
7609		561	2.06	0.37	1.62	0.29	15.37	2.74	4.23	0.75	4.25	0.76	1.73	0.31
7610		567	2.11	0.37	1.73	0.31	17.23	3.04	4.47	0.79	4.29	0.76	1.60	0.28
7611		521	1.92	0.37	1.74	0.33	19.19	3.68	5.55	1.07	3.73	0.72	1.42	0.27
7612		655	2.05	0.31	1.96	0.30	18.65	2.85	4.94	0.75	5.00	0.76	1.81	0.28
7613		681	2.05	0.30	1.97	0.29	18.06	2.65	5.38	0.79	4.11	0.60	1.52	0.22
7614		607	2.21	0.36	1.82	0.30	16.17	2.66	4.26	0.70	4.57	0.75	1.86	0.31
7615		617	1.95	0.32	1.62	0.26	16.98	2.75	4.15	0.67	4.61	0.75	1.70	0.28
7616		606	2.00	0.33	1.67	0.28	16.12	2.66	4.43	0.73	4.33	0.71	1.66	0.27
7617		698	2.00	0.29	2.10	0.30	22.26	3.19	5.75	0.82	4.90	0.70	1.89	0.27
7618		608	2.05	0.34	2.09	0.34	23.17	3.81	5.19	0.85	3.93	0.65	1.46	0.24
7619		384	2.30	0.60	1.50	0.39	13.78	3.59	3.77	0.98	4.27	1.11	1.49	0.39
7620		633	2.01	0.32	1.83	0.29	19.30	3.05	4.65	0.73	4.07	0.64	1.60	0.25
7621		690	1.91	0.28	1.82	0.26	20.01	2.90	4.61	0.67	5.19	0.75	1.87	0.27
7622		682	2.03	0.30	2.22	0.33	21.38	3.13	5.71	0.84	5.15	0.76	1.96	0.29
7623		596	1.93	0.32	1.58	0.27	19.75	3.31	4.29	0.72	4.19	0.70	1.54	0.26
7624		665	2.02	0.30	2.18	0.33	28.48	4.28	8.95	1.35	4.80	0.72	1.84	0.28
7625		690	2.09	0.30	1.87	0.27	19.91	2.89	5.10	0.74	4.38	0.63	1.65	0.24
7626		641	2.06	0.32	1.92	0.30	24.11	3.76	6.34	0.99	4.79	0.75	1.79	0.28
7627		635	2.02	0.32	2.11	0.33	19.85	3.13	4.95	0.78	4.53	0.71	1.56	0.25
Mean		618	2.04	0.34	1.86	0.30	19.48	3.16	5.09	0.83	4.48	0.73	1.68	0.28
±S.D.		±73	±0.09	±0.07	±0.21	±0.03	±3.36	±0.45	±1.11	±0.16	±0.40	±0.10	±0.16	±0.03
77-7678	10.0	737	2.05	0.28	2.02	0.27	27.37	3.71	6.57	0.89	4.62	0.63	1.51	0.20
7679		759	2.10	0.28	2.15	0.28	22.57	2.97	5.32	0.70	4.05	0.53	1.62	0.21
7681		439	1.91	0.44	1.84	0.42	15.19	3.46	6.23	1.42	2.31	0.53	0.78	0.18
7682		722	2.02	0.28	1.72	0.24	20.87	2.89	5.12	0.71	4.29	0.59	1.53	0.21
7684		631	2.01	0.32	1.86	0.29	19.63	3.11	5.13	0.81	4.08	0.65	1.62	0.26
7685		604	2.08	0.34	1.94	0.32	20.52	3.40	5.96	0.99	4.28	0.71	1.57	0.26
7686		613	2.04	0.33	1.99	0.32	19.33	3.15	5.31	0.87	4.32	0.70	1.51	0.25
7687		599	1.97	0.33	2.39 ^a	0.40 ^a	19.11	3.19	5.32	0.89	3.84	0.64	1.68	0.28
7688		618	2.05	0.33	1.63	0.26	17.07	2.76	4.21	0.68	4.09	0.66	1.71	0.28
7689		660	1.97	0.30	2.02	0.31	23.48	3.56	5.34	0.81	4.14	0.63	1.69	0.26
7690		582	1.84	0.32	1.61	0.28	18.73	3.22	5.13	0.88	4.40	0.76	1.85	0.32
7691		708	2.03	0.29	1.90	0.27	24.51	3.46	6.43	0.91	6.41 ^a	0.91 ^a	2.29 ^a	0.32 ^a
7692		736	2.09	0.28	2.26	0.31	24.81	3.37	5.80	0.79	4.34	0.59	1.72	0.23
7693		589	2.04	0.35	1.76	0.30	18.32	3.11	4.48	0.76	4.78	0.81	1.93	0.33
7694		566	1.92	0.34	1.79	0.32	19.20	3.39	4.99	0.88	4.30	0.76	1.74	0.31
7695		630	2.05	0.33	2.21	0.35	23.17	3.68	6.30	1.00	4.24	0.67	1.68	0.27
7696		655	2.06	0.31	2.11	0.32	21.27	3.25	5.36	0.82	4.76	0.73	1.71	0.26
7697		615	1.97	0.32	2.13	0.35	19.95	3.24	4.69	0.76	3.40	0.55	1.62	0.26
Mean		637	2.01	0.32	1.94	0.31	20.84	3.27	5.43	0.86	4.13	0.66	1.62	0.26
±S.D.		±77	±0.07	±0.04	±0.20	±0.04	±3.02	±0.26	±0.67	±0.17	±0.57	±0.08	±0.24	±0.04

[†]Male rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aThe weights of the epididymides of animal numbers 77-7464 & 77-7481 were not included in the statistical analysis due to improper processing.

Table A-27

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Interim (4 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)							
			BRAIN		HEART		LIVER		KIDNEYS	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7449	0.0	306.0	1.78	0.58	1.03	0.34	10.63	3.47	2.02	0.66
7450		209.0	1.77	0.85	0.98	0.47	10.44	5.00	2.13	1.02
7451		262.0	1.65	0.63	0.96	0.37	9.81	3.74	2.23	0.85
7452		330.0	1.79	0.54	1.02	0.31	11.49	3.48	2.42	0.73
7453		319.0	1.85	0.58	1.16	0.36	13.36	4.19	2.40	0.75
Mean		285.2	1.77	0.64	1.03	0.37	11.15	3.98	2.24	0.80
±S.D.		±49.8	±0.07	±0.12	±0.08	±0.06	±1.38	±0.64	±0.17	±0.14
77-7519	0.1	316.0	1.77	0.56	1.00	0.32	10.25	3.24	2.12	0.67
7520		301.0	1.85	0.61	1.00	0.33	10.84	3.60	2.36	0.78
7521		286.0	1.88	0.66	0.92	0.32	9.52	3.35	2.02	0.71
7522		299.0	1.74	0.58	0.97	0.32	10.74	3.59	2.29	0.77
7523		307.0	1.94	0.63	1.04	0.34	9.58	3.12	2.33	0.76
Mean		301.8	1.84	0.61	0.99	0.33	10.19	3.38	2.22	0.74
±S.D.		±11.0	±0.08	±0.04	±0.04	±0.01	±0.62	±0.21	±0.15	±0.05
77-7588	1.0	311.0	1.94	0.62	1.11	0.36	9.34	3.16	2.37	0.76
7589		276.0	1.79	0.65	0.89	0.32	8.75	3.17	2.14	0.78
7590		279.0	1.73	0.62	0.94	0.34	8.88	3.18	2.08	0.75
7591		309.0	1.86	0.60	1.02	0.33	11.39	3.69	2.42	0.78
7592		331.0	1.89	0.57	1.00	0.30	10.86	3.28	2.19	0.66
Mean		301.2	1.84	0.61	0.99	0.33	9.94	3.30	2.24	0.75
±S.D.		±23.3	±0.08	±0.03	±0.08	±0.02	±1.17	±0.22	±0.15	±0.05
77-7658	10.0	247.0	1.80	0.73	0.93	0.38	10.39	4.21	2.38	0.96
7659		292.0	1.78	0.61	0.85	0.29	10.33	3.54	2.15	0.74
7660		281.0	1.78	0.63	1.10	0.39	10.20	3.63	2.05	0.73
7661		299.0	1.92	0.64	0.93	0.31	10.14	3.39	2.25	0.75
7662		276.0	1.79	0.65	0.91	0.33	9.32	3.38	1.86	0.67
Mean		279.0	1.81	0.65	0.94	0.34	10.08	3.63	2.14	0.77
±S.D.		±20.0	±0.06	±0.05	±0.09	±0.04	±0.43	±0.34	±0.20	±0.11

Table A-27 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT†

Female Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Interim (14 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)							
			BRAIN		HEART		LIVER		KIDNEYS	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7444	0.0	305.6	1.86	0.61	0.98	0.32	7.64	2.50	2.30	0.75
7445		328.9	1.81	0.55	1.03	0.31	9.33	2.84	2.27	0.69
7446		246.8	1.78	0.72	0.87	0.35	6.50	2.63	1.61	0.65
7447		326.1	1.81	0.56	1.02	0.31	8.19	2.51	2.14	0.66
7448		308.6	1.81	0.59	0.95	0.31	7.73	2.50	2.25	0.73
Mean		303.2	1.81	0.60	0.97	0.32	7.88	2.60	2.11	0.70
±S.D.		±33.2	±0.03	±0.07	±0.06	±0.02	±1.02	±0.14	±0.29	±0.04
77-7514	0.1	357.7	1.91	0.53	1.17	0.33	8.86	2.48	2.43	0.68
7515		290.8	1.85	0.64	0.98	0.34	7.35	2.53	2.16	0.74
7516		330.5	1.85	0.56	1.28	0.39	8.19	2.48	2.58	0.78
7517		317.0	1.82	0.57	1.07	0.34	7.87	2.48	2.21	0.70
7518		290.8	1.82	0.63	1.10	0.38	7.48	2.57	2.37	0.81
Mean		317.4	1.85	0.59	1.12	0.35	7.95	2.51	2.35	0.74
±S.D.		±28.3	±0.04	±0.04	±0.11	±0.03	±0.61	±0.04	±0.17	±0.06
77-7583	1.0	280.2	1.71	0.61	0.89	0.32	6.47	2.31	2.08	0.74
7584		271.1	1.85	0.68	0.88	0.32	7.05	2.60	2.14	0.79
7585		304.4	1.87	0.61	1.06	0.35	7.62	2.50	2.25	0.74
7586		278.7	1.85	0.66	0.94	0.34	7.20	2.58	2.07	0.74
7587		284.4	1.82	0.64	0.93	0.33	6.91	2.43	2.25	0.79
Mean		283.8	1.82	0.64	0.94	0.33	7.05	2.49	2.16	0.76
±S.D.		±12.5	±0.06	±0.03	±0.07	±0.01	±0.42	±0.12	±0.09	±0.03
77-7652	10.0	300.4	1.91	0.64	1.07	0.36	8.48	2.82	2.40	0.80
7654		281.6	1.79	0.64	0.97	0.34	7.29	2.59	2.28	0.81
7655		313.9	1.90	0.61	1.00	0.32	8.75	2.79	2.25	0.72
7656		309.9	1.82	0.59	0.93	0.30	9.67	3.12	2.33	0.75
7657		285.4	1.98	0.69	1.06	0.37	7.97	2.79	2.48	0.87
Mean		298.2	1.88	0.63	1.01	0.34	8.43	2.82	2.35	0.79
±S.D.		±14.4	±0.08	±0.04	±0.06	±0.03	±0.89	±0.19	±0.09	±0.06

Table A-27 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Terminal (40 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)							
			BRAIN		HEART		LIVER		KIDNEYS	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7419	0.0	352.8	1.88	0.53	1.17	0.33	10.81	3.06	2.56	0.73
7420		291.0	1.80	0.62	1.09	0.37	9.20	3.16	2.47	0.85
7421		314.4	1.86	0.59	1.21	0.38	9.53	3.03	2.69	0.86
7422		334.2	2.01	0.60	1.36	0.41	9.29	2.78	2.57	0.77
7424		291.0	1.88	0.65	1.12	0.38	11.23	3.86	2.42	0.83
7425		281.5	1.82	0.65	1.14	0.40	11.55	4.10	2.74	0.97
7426		303.5	1.89	0.62	1.11	0.37	11.23	3.70	2.64	0.87
7427		310.1	1.83	0.59	1.27	0.41	10.53	3.40	2.23	0.72
7428		353.9	1.87	0.53	1.28	0.36	13.42	3.79	3.30	0.93
7429		334.5	1.86	0.56	1.21	0.36	9.81	2.93	2.56	0.77
7430		289.4	1.96	0.68	1.17	0.40	12.51	4.32	2.66	0.92
7431		317.3	1.80	0.57	1.34	0.42	10.99	3.46	2.62	0.83
7432		320.9	1.93	0.60	1.27	0.40	12.87	4.01	2.90	0.90
7433		310.4	1.94	0.63	1.13	0.36	10.73	3.46	2.44	0.79
7434		267.8	1.81	0.68	1.21	0.45	11.55	4.31	2.69	1.00
7435		315.7	1.81	0.57	1.26	0.40	12.55	3.98	2.89	0.92
7436		341.5	1.90	0.56	1.30	0.38	12.59	3.69	2.94	0.86
7437		316.4	1.88	0.59	1.31	0.41	12.50	3.95	2.60	0.82
7438		306.9	1.80	0.59	1.16	0.38	12.51	4.08	2.40	0.78
Mean		313.3	1.87	0.60	1.22	0.39	11.34	3.64	2.65	0.85
±S. D.		±23.3	±0.06	±0.04	±0.08	±0.03	±1.28	±0.47	±0.24	±0.08
77-7489	0.1	335.7	1.81	0.54	1.22	0.36	10.88	3.24	2.58	0.77
7490		349.2	1.95	0.56	1.21	0.35	14.30	4.10	2.66	0.76
7491		301.4	1.85	0.61	1.32	0.44	9.60	3.19	2.43	0.81
7492		293.4	1.80	0.61	0.85	0.29	8.87	3.02	2.14	0.73
7493		368.4	1.83	0.50	1.17	0.32	11.77	3.19	2.48	0.67
7494		329.0	1.75	0.53	1.16	0.35	11.14	3.39	2.39	0.73
7495		306.4	1.71	0.56	1.22	0.40	11.44	3.73	2.64	0.86
7496		287.3	1.87	0.65	1.08	0.38	11.05	3.85	2.25	0.78
7497		328.4	1.92	0.58	1.33	0.40	10.88	3.31	2.81	0.86
7498		314.1	1.79	0.57	1.15	0.37	8.29	2.64	2.31	0.74
7499		331.1	1.88	0.57	1.25	0.38	11.58	3.50	2.36	0.71
7500		267.9	1.87	0.70	1.11	0.41	9.03	3.37	2.81	1.05
7501		337.2	1.94	0.58	1.23	0.36	12.27	3.64	2.44	0.72
7502		360.7	1.93	0.54	1.26	0.35	13.21	3.66	2.68	0.74
7503		276.6	1.81	0.65	1.03	0.37	10.79	3.87	2.46	0.89
7504		332.2	1.87	0.56	1.35	0.41	12.11	3.65	2.54	0.76
7505		377.4	1.82	0.48	1.27	0.34	11.58	3.07	2.53	0.67
7506		290.6	1.79	0.62	1.01	0.35	10.83	3.73	2.50	0.86
7507		297.6	1.77	0.59	1.08	0.36	11.15	3.75	2.74	0.92
7508		401.0	1.90	0.47	1.08	0.27	11.72	2.92	2.30	0.57
Mean		324.3	1.84	0.57	1.17	0.36	11.12	3.44	2.50	0.78

Table A-27 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE RAT[†]

Female Rat: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Terminal (40 weeks) Sacrifice

Animal Number	Exposure Level ppm	Final Body Weight (g)	Organ Weights (g and g/100g Body Weight)							
			BRAIN		HEART		LIVER		KIDNEYS	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g
77-7558	1.0	198.0	1.82	0.92	0.97	0.49	6.95	3.51	2.64	1.33
7559		328.2	1.83	0.56	1.15	0.35	11.34	3.46	2.50	0.76
7560		312.5	1.82	0.58	1.22	0.39	10.94	3.50	2.56	0.82
7561		334.5	1.84	0.55	1.14	0.34	9.72	2.91	2.65	0.79
7562		258.6	1.89	0.73	1.12	0.43	6.75	2.61	2.11	0.82
7563		275.1	1.79	0.65	1.13	0.41	10.73	3.90	2.93	1.07
7564		145.8	1.91	1.31	0.70	0.48	5.88	4.03	1.84	1.26
7565		264.6	1.84	0.70	1.10	0.42	8.31	3.14	2.35	0.89
7567		297.0	1.79	0.60	1.16	0.39	10.04	3.38	2.34	0.79
7568		311.6	1.87	0.60	1.21	0.39	9.80	3.15	2.46	0.79
7569		317.6	1.77	0.56	1.13	0.36	10.23	3.22	2.53	0.80
7570		347.0	1.88	0.54	1.39	0.40	12.82	3.69	2.86	0.82
7571		334.0	1.95	0.58	1.26	0.38	11.50	3.44	2.45	0.73
7572		299.7	1.87	0.62	1.13	0.38	12.33	4.11	2.90	0.97
7573		263.4	1.82	0.69	1.11	0.42	8.72	3.31	2.07	0.79
7574		432.6	1.88	0.43	1.30	0.30	21.28	4.92	2.73	0.63
7575		287.1	1.75	0.61	1.21	0.42	9.76	3.40	2.44	0.85
7576		343.6	1.93	0.56	1.42	0.41	12.91	3.76	3.25	0.95
7577		251.2	1.88	0.75	0.98	0.39	10.05	4.00	2.35	0.94
Mean		294.8	1.85	0.66	1.15	0.40	10.53	3.55	2.52	0.88
±S.D.		±60.8	±0.05	±0.19	±0.16	±0.04	±3.26	±0.51	±0.33	±0.17
77-7628	10.0	330.0	1.88	0.57	1.13	0.34	13.23	4.01	2.55	0.77
7630		304.8	1.81	0.59	1.25	0.41	14.47	4.75	2.80	0.92
7631		345.0	1.98	0.57	1.07	0.31	12.64	3.66	2.35	0.68
7632		309.0	1.88	0.61	1.25	0.40	11.44	3.70	2.57	0.83
7635		289.3	1.80	0.62	1.24	0.43	10.10	3.49	2.65	0.92
7636		304.4	1.83	0.60	1.14	0.37	11.33	3.72	2.62	0.86
7637		371.9	1.88	0.51	1.27	0.34	12.64	3.40	2.59	0.70
7638		275.9	1.82	0.66	1.11	0.40	10.54	3.82	2.40	0.87
7639		297.1	1.84	0.62	1.15	0.39	18.68	6.29	3.13	1.05
7640		382.1	1.87	0.49	1.22	0.32	12.49	3.27	3.25	0.85
7641		308.5	1.90	0.62	1.30	0.42	11.99	3.89	3.11	1.01
7642		315.4	1.90	0.60	1.18	0.37	12.32	3.91	2.89	0.92
7643		324.7	1.89	0.58	1.26	0.39	11.49	3.54	2.71	0.83
7644		384.4	1.92	0.50	1.47	0.38	11.20	2.91	2.89	0.75
7645		362.0	1.87	0.52	1.06	0.29	14.46	3.99	2.63	0.73
7646		267.9	1.81	0.68	1.08	0.40	9.67	3.61	2.34	0.87
7647		289.3	1.78	0.62	1.18	0.41	9.20	3.18	2.57	0.89
Mean		321.3	1.86	0.59	1.20	0.38	12.23	3.83	2.71	0.85
±S.D.		±36.2	±0.05	±0.05	±0.10	±0.04	±2.23	±0.75	±0.27	±0.10

[†]Female rats were exposed to 0, 0.1, 1.0, or 10 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

Table A-28

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Body Weights (kg.)

Exposure Level-ppm	Animal Number	WEEK OF STUDY															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	- ^a	4.31	4.45	4.28	4.23	4.21	4.07	4.01	4.03	4.09	4.11	4.26	4.30	4.32	4.33	4.28
	215	3.34	3.56	3.50	3.51	3.58	3.57	3.57	3.46	3.24	DEAD	—	—	—	—	—	—
	910	3.87	3.95	3.94	3.82	3.78	3.80	3.81	3.81	3.83	3.86	3.83	3.90	3.86	3.85	3.87	3.85
	180	3.87	3.95	3.88	3.89	3.89	3.93	3.91	3.82	3.77	3.79	3.76	3.69	3.61	3.57	3.49	3.27
	909	3.85	3.52	3.66	3.68	3.73	3.86	3.86	3.85	3.80	3.92	3.80	3.72	3.65	- ^a	3.73	3.76
	901	4.01	4.12	4.16	4.21	4.23	4.17	4.18	4.17	4.23	4.20	4.06	4.14	4.16	4.12	4.14	- ^a
	916	4.19	4.21	4.26	4.08	4.09	4.15	4.18	4.20	4.25	4.27	4.27	4.24	4.17	4.19	4.30	4.38
	932	3.75	4.23	4.21	4.25	4.42	4.33	4.40	4.33	4.43	4.34	- ^a	4.25	4.30	4.25	4.24	4.18
	907	3.71	3.75	3.56	3.55	3.56	3.66	3.60	3.72	3.70	3.75	3.79	3.78	3.63	3.60	3.55	3.54
	923	4.33	4.47	3.39 ^b	4.33	4.30	4.35	4.20	4.10	4.13	4.05	- ^a	- ^a	- ^a	- ^a	3.74	3.74
	Mean	3.88	4.01	3.96	3.96	3.98	4.00	3.98	3.95	3.94	4.03	3.95	4.00	3.96	3.99	3.93	3.88
	±S.D.	±0.29	±0.32	±0.34	±0.31	±0.31	±0.28	±0.27	±0.26	±0.35	±0.21	±0.20	±0.25	±0.31	±0.31	±0.33	±0.38
0.1	917	3.42	3.52	3.51	3.36	3.40	3.33	3.23	3.30	3.27	3.24	3.33	3.25	3.25	3.31	3.24	3.41
	920	4.02	4.18	4.18	4.14	4.16	4.18	4.24	4.23	4.26	4.33	4.32	4.41	4.47	4.53	4.50	4.52
	906	3.12	3.25	3.24	3.22	3.29	3.19	3.20	3.20	3.16	3.16	3.14	3.18	3.30	3.60	3.65	3.66
	911	4.78	4.35	3.74	3.77	3.76	3.82	3.89	3.86	3.94	3.85	3.89	3.95	3.95	3.97	3.87	3.87
	1128	4.78	4.35	4.22	4.04	4.25	4.40	4.43	4.42	4.46	4.38	4.43	4.41	4.47	4.48	4.50	4.44
	913	3.75	3.88	3.33	3.35	3.38	3.42	3.42	3.48	3.46	3.45	3.48	3.58	3.59	3.67	3.69	3.69
	902	4.07	4.23	4.17	4.17	4.17	3.95	3.85	3.63	3.77	3.88	3.99	4.01	4.07	4.07	4.11	4.16
	928	3.74	3.87	3.67	3.60	3.53	3.68	3.70	3.71	3.80	3.80	3.88	3.99	3.91	3.96	3.96	3.98
	915	4.15	4.27	4.22	4.20	4.23	4.34	4.43	4.48	4.54	4.56	- ^a	4.42	4.15	3.98	3.95	4.10
	912	3.25	3.26	3.24	3.28	3.23	3.23	3.32	3.36	3.41	3.40	- ^a	3.39	3.34	- ^a	3.42	3.43
	Mean	3.91	3.92	3.75	3.71	3.74	3.75	3.77	3.77	3.81	3.81	3.81	3.86	3.85	3.95	3.89	3.93
	±S.D.	±0.57	±0.44	±0.42	±0.40	±0.42	±0.46	±0.48	±0.47	±0.49	±0.50	±0.46	±0.48	±0.46	±0.39	±0.41	±0.39

Table A-28 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Body Weights (kg.)

Exposure Level-ppm	Animal Number	WEEK OF STUDY															
		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Control	844	4.05	4.11	4.13	4.14	4.15	4.22	4.22	4.13	4.07	4.14	4.15	4.22	4.09	4.19	4.34	- ^a
	215	DEAD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	910	3.91	3.85	3.80	3.84	3.81	3.95	3.86	3.88	3.80	3.94	3.99	4.04	3.95	4.01	4.01	- ^a
	180	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	909	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	901	4.02	3.97	4.03	4.01	4.03	4.11	4.10	4.11	4.18	4.08	4.22	4.28	4.22	4.35	4.32	- ^a
	916	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	932	4.29	4.24	4.27	4.24	4.17	4.17	4.21	4.10	4.10	4.03	4.04	4.23	4.17	4.24	4.23	- ^a
	907	3.55	3.46	3.58	3.55	3.58	3.63	3.63	3.66	3.72	3.73	3.82	3.83	3.84	3.84	3.85	- ^a
	923	3.79	3.64	3.67	3.54	3.53	3.56	3.49	3.48	3.60	3.67	3.61	3.73	3.70	3.85	3.79	- ^a
	Mean	3.94	3.88	3.91	3.89	3.88	3.94	3.92	3.89	3.91	3.93	3.97	4.05	4.00	4.08	4.09	- ^a
	±S.D.	±0.25	±0.29	±0.27	±0.30	±0.28	±0.28	±0.31	±0.27	±0.24	±0.19	±0.22	±0.23	±0.20	±0.21	±0.24	- ^a
0.1	917	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	920	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	906	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	911	3.80	3.73	3.85	4.04	4.03	4.12	4.16	4.14	4.06	4.03	4.14	4.10	4.12	4.15	4.18	- ^a
	1128	4.50	4.59	4.56	4.71	4.63	4.74	4.70	4.69	4.84	4.83	4.72	4.82	4.67	4.69	4.80	- ^a
	913	3.75	3.73	3.75	3.30	- ^a	3.92	3.83	3.88	3.93	3.93	3.99	4.02	3.97	3.91	3.85	- ^a
	902	4.22	4.21	4.29	4.39	4.44	4.56	4.58	4.62	4.65	4.64	4.72	4.73	4.72	4.78	4.78	- ^a
	928	4.06	4.07	4.16	4.23	4.20	4.24	4.33	4.32	4.45	4.37	4.44	4.40	4.36	4.50	4.51	- ^a
	915	SACRIFICED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	912	3.28	3.24	3.37	3.43	3.45	3.57	3.62	3.64	3.67	3.64	3.80	3.76	3.83	3.86	3.94	- ^a
	Mean	3.94	3.93	4.00	4.02	4.15	4.19	4.20	4.21	4.27	4.24	4.30	4.30	4.28	4.31	4.34	- ^a
	±S.D.	±0.42	±0.47	±0.43	±0.55	±0.45	±0.43	±0.42	±0.41	±0.45	±0.45	±0.39	±0.42	±0.37	±0.40	±0.41	- ^a

Table A-28 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Body Weights (kg.)

Exposure Level-ppm	Animal Number	WEEK OF STUDY															
		31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Control	844	4.34	4.27	4.19	4.29	4.28	4.30	4.21	4.22	4.39	4.28	4.39	4.42	4.30	4.33	4.38	4.30 ^c
	215	Dead	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	910	4.15	4.03	4.04	4.12	4.11	4.16	4.10	4.13	4.25	4.18	4.25	4.31	4.30	4.34	4.24	4.20
	180	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	909	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	901	4.44	4.33	4.38	4.42	4.41	4.44	4.46	4.47	4.48	4.48	4.49	4.50	4.54	4.60	4.51	4.46
	916	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	932	4.22	4.21	4.19	4.13	4.15	4.13	4.20	4.12	4.14	4.10	4.01	4.16	4.12	4.11	4.12	4.12
	907	3.91	3.81	3.92	3.86	3.88	3.80	3.88	3.91	3.93	3.65	3.72	3.83	3.75	3.88	3.85	3.81
	923	3.71	3.66	3.68	3.70	3.75	3.74	3.78	3.73	3.76	3.71	3.62	3.61	3.50	3.45	3.36	3.14
	Mean	4.13	4.05	4.07	4.09	4.10	4.09	4.11	4.10	4.16	4.07	4.08	4.14	4.09	4.12	4.08	4.01
	±S.D.	±0.27	±0.27	±0.25	±0.27	±0.25	±0.28	±0.25	±0.26	±0.27	±0.33	±0.36	±0.35	±0.39	±0.41	±0.42	±0.48
0.1	917	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	920	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	906	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	911	4.22	4.17	4.06	4.07	4.04	4.12	3.93	3.90	4.04	4.07	4.03	4.07	4.10	4.12	4.02	3.96 ^c
	1128	4.92	4.86	4.84	4.81	4.81	4.81	4.69	4.78	4.91	4.74	4.80	4.82	4.86	4.97	4.79	4.78
	913	3.96	3.93	3.89	3.85	3.88	3.83	3.86	3.88	3.89	3.94	3.93	3.91	3.95	3.93	3.83	3.80
	902	4.83	4.80	4.89	4.74	4.82	4.83	4.78	4.83	4.86	4.85	4.79	4.87	4.81	4.87	4.83	4.75
	928	4.64	4.51	4.55	4.16	4.39	4.40	4.45	4.49	4.56	4.53	4.61	4.68	4.64	4.74	4.63	4.56
	915	SACRIFICED	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	912	3.98	3.96	3.98	3.98	3.97	3.98	4.01	4.06	4.07	4.07	4.08	4.12	4.03	4.08	4.07	4.05
	Mean	4.43	4.37	4.37	4.27	4.32	4.33	4.29	4.32	4.39	4.37	4.37	4.41	4.40	4.45	4.36	4.32
	±S.D.	±0.43	±0.41	±0.45	±0.41	±0.42	±0.42	±0.40	±0.43	±0.45	±0.39	±0.40	±0.42	±0.42	±0.46	±0.44	±0.43

Table A-28 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Body Weights (kg.)

Exposure Level-ppm	Animal Number	WEEK OF STUDY															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	4.12	4.17	3.84	4.11	3.89	3.90	3.86	3.72	3.80	3.89	3.90	3.84	3.74	3.39	3.80	3.86
	931	3.88	3.95	4.11	3.95	3.95	3.99	4.00	4.05	3.89	3.81	3.75	3.76	3.76	3.37	3.77	3.54
	1126	4.71	4.73	4.44	4.37	4.45	4.35	4.13	4.20	3.81	3.63	3.51	3.23	DEAD	—	—	—
	919	4.18	4.32	4.18	4.19	4.26	4.35	4.40	4.47	4.35	4.15	4.02	4.25	4.32	— ^a	4.38	4.37
	949	4.55	4.53	4.44	4.46	4.55	4.52	4.55	4.58	4.53	4.52	4.54	4.58	4.58	4.47	4.53	4.53
	178	4.10	4.18	4.13	4.19	4.28	4.20	— ^a	4.30	4.34	4.38	— ^a	4.38	4.36	— ^a	4.37	4.32
	926	3.43	3.46	3.40	3.37	3.38	3.28	3.31	3.35	3.39	3.40	3.39	3.39	3.35	3.36	3.36	3.38
	904	3.81	3.89	3.86	3.82	3.71	3.49	3.42	3.40	3.26	3.13	— ^a	— ^a	— ^a	3.06	2.94	— ^a
	930	3.42	3.53	3.42	3.37	3.37	3.34	3.30	3.23	3.24	3.24	— ^a	— ^a	3.23	3.25	3.25	— ^a
	932A	4.41	4.45	4.34	4.35	4.35	4.37	4.35	4.33	4.34	4.40	4.39	4.47	— ^a	4.45	4.45	— ^a
	Mean	4.06	4.12	4.02	4.02	4.02	3.98	3.89	3.96	3.90	3.86	3.93	3.98	3.91	3.62	3.87	4.00
	±S. D.	±0.44	±0.42	±0.38	±0.39	±0.43	±0.46	±0.54	±0.50	±0.49	±0.50	±0.42	±0.50	±0.52	±0.58	±0.59	±0.48
10.0	914	4.24	4.22	4.49	4.34	4.33	4.36	4.21	4.18	4.21	4.31	SACRIFICED	—	—	—	—	—
	921	3.95	4.09	3.89	3.73	3.81	3.84	3.61	3.40	3.52	3.56	3.62	3.68	3.75	3.80	3.88	3.92
	922	4.42	4.49	4.19	4.18	4.27	4.16	4.25	4.32	DEAD	—	—	—	—	—	—	—
	908	3.95	4.09	4.06	4.00	3.98	4.00	4.01	4.02	DEAD	—	—	—	—	—	—	—
	918	3.67	3.68	3.75	3.67	3.68	3.70	3.70	3.75	3.88	3.89	3.93	3.87	DEAD	—	—	—
	933	3.71	3.74	3.66	3.59	3.57	3.48	3.45	3.36	3.50	3.42	3.44	3.47	3.53	3.56	3.63	3.65
	927	3.60	3.77	3.66	3.70	3.67	3.73	3.85	3.86	3.91	DEAD	—	—	—	—	—	—
	1125	3.10	3.20	3.15	3.10	3.10	3.08	3.12	3.11	3.16	3.18	3.21	3.29	3.32	3.32	3.32	3.37
	925	3.57	3.63	3.55	3.55	3.55	3.56	3.61	3.65	3.75	3.80	3.85	3.90	3.94	3.94	3.99	4.04
	924	4.57	4.53	4.51	4.32	4.38	4.39	4.35	4.42	4.93	4.48	— ^a	— ^a	4.65	4.69	4.75	4.73
	Mean	3.88	3.94	3.89	3.82	3.83	3.83	3.82	3.81	3.86	3.81	3.61	3.64	3.84	3.86	3.91	3.94
	±S. D.	±0.44	±0.42	±0.43	±0.39	±0.41	±0.41	±0.39	±0.44	±0.54	±0.47	±0.30	±0.26	±0.51	±0.52	±0.53	±0.51

Table A-28 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Body Weights (kg.)

Exposure Level-ppm	Animal Number	WEEK OF STUDY															
		15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1.0	929	3.74	3.75	3.81	3.93	3.89	3.96	4.02	4.02	4.04	4.07	4.17	4.13	4.06	4.14	3.90	-a
	931	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1126	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	919	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	949	4.62	4.56	4.49	4.50	4.47	4.52	4.47	4.42	4.45	4.46	4.44	4.32	4.39	4.43	4.36	-a
	178	4.38	4.37	4.38	4.45	4.37	4.47	4.46	4.50	4.43	4.47	4.50	4.46	4.49	4.47	4.60	-a
	926	3.34	3.40	3.40	3.49	3.45	3.60	3.61	3.10	3.65	3.69	3.77	3.71	3.72	3.58	3.43	-a
	904	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	930	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	932A	4.57	4.63	4.62	4.66	-a	4.74	4.79	4.78	4.83	4.89	4.90	4.98	4.96	5.00	5.06	-a
	Mean	4.13	4.14	4.14	4.21	4.05	4.26	4.27	4.16	4.28	4.32	4.36	4.32	4.32	4.32	4.27	-a
	±S.D.	±0.56	±0.54	±0.52	±0.49	±0.47	±0.47	±0.46	±0.65	±0.45	±0.45	±0.42	±0.46	±0.47	±0.52	±0.63	-a
10.0	914	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	921	3.94	3.96	3.98	4.01	4.04	4.08	4.15	4.13	4.15	4.21	4.28	4.26	4.29	4.44	4.53	-a
	922	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	908	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	918	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	933	3.71	3.75	3.76	3.80	3.80	3.98	4.00	4.00	4.07	4.04	4.08	4.06	4.10	4.15	4.19	-a
	927	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1125	3.24	3.30	3.26	3.25	3.25	3.29	3.31	3.21	3.25	3.25	3.23	3.21	3.22	3.29	3.24	-a
	925	4.07	4.01	4.10	4.21	4.15	4.23	4.21	4.23	4.20	4.20	4.18	4.21	4.17	4.19	4.26	-a
	924	4.62	4.35	4.40	4.60	4.60	4.51	4.17	4.38	3.96	3.92	4.00	4.01	4.02	4.04	4.00	-a
	Mean	3.92	3.87	3.90	3.97	3.97	4.02	3.97	3.99	3.93	3.92	3.95	3.95	3.96	4.02	4.04	-a
	±S.D.	±0.50	±0.39	±0.43	±0.50	±0.50	±0.45	±0.38	±0.46	±0.39	±0.40	±0.42	±0.43	±0.43	±0.43	±0.49	-a

Table A-28 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Body Weights (kg.)

Exposure Level-ppm	Animal Number	WEEK OF STUDY															
		31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1.0	929	4.15	4.04	4.05	3.38	3.31	3.44	3.48	3.50	3.49	3.42	3.28	2.92	2.72	2.77	2.73	2.59 ^c
	931	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1126	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	919	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	949	4.41	4.33	4.31	4.31	4.22	4.25	4.27	4.25	4.37	4.34	4.33	4.41	4.35	4.44	4.27	4.27
	178	4.69	4.60	4.61	4.73	4.68	4.76	4.79	4.75	4.76	4.63	4.73	4.69	4.70	4.79	4.57	4.60
	926	3.40	3.37	3.37	3.28	3.28	3.28	3.27	3.26	3.22	3.18	2.96	2.96	2.94	2.92	2.89	2.82
	904	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	930	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	932A	5.03	5.03	5.01	4.99	5.03	5.03	5.02	4.99	5.00	4.94	4.92	4.93	4.93	4.94	4.86	4.78
	Mean	4.34	4.27	4.27	4.14	4.10	4.15	4.17	4.15	4.17	4.10	4.04	3.98	3.91	3.95	3.84	3.79
	±S.D.	±0.62	±0.62	±0.62	±0.78	±0.79	±0.78	±0.78	±0.76	±0.78	±0.77	±0.88	±0.97	±1.05	±1.07	±1.01	±1.06
10.0	914	SACRIFICED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	921	4.57	4.53	4.59	4.67	4.56	4.49	4.56	4.63	4.68	4.75	4.84	4.91	4.89	4.93	4.88	4.82 ^c
	922	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	908	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	918	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	933	4.15	4.18	4.20	4.16	4.20	4.20	4.21	4.24	4.27	4.25	4.23	4.27	4.22	4.24	4.16	4.10
	927	DEAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1125	3.26	3.27	3.28	3.23	3.22	3.27	3.22	3.20	3.21	3.23	3.23	3.18	3.20	3.23	3.28	3.19
	925	4.30	4.28	4.34	4.40	4.42	4.49	4.46	4.50	4.51	4.52	4.37	4.12	4.19	4.41	4.37	4.21
	924	4.19	4.16	4.08	3.89	4.13	4.12	3.95	4.07	4.17	4.15	4.24	4.24	4.33	4.32	4.33	4.23
	Mean	4.09	4.08	4.10	4.07	4.11	4.11	4.08	4.13	4.17	4.18	4.18	4.14	4.17	4.23	4.20	4.11
	±S.D.	±0.49	±0.48	±0.50	±0.55	±0.52	±0.50	±0.54	±0.56	±0.57	±0.58	±0.59	±0.62	±0.61	±0.62	±0.58	±0.59

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aWeight inadvertently was not recorded.

^bThe weight recorded was apparently incorrect and therefore was not included in the calculation of the mean.

^cValues for the 46th week represent fasted body weights taken prior to necropsy.

Table A-29

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Sperm Count (Millions/ml Semen)

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	999	— ^a	742	388	718	300	301	338	342	312	424	437	415	789	458	442
	215	741	468	1390	329	531	315	193	398	Dead	—	—	—	—	—	—	—
	910	714	360	690	247	— ^a	450	319	501	601	463	545	377	463	535	587	466
	180	758	1850	358	676	514	655	582	549	514	482	633	960	570	1110	1508	1099
	909	676	646	787	903	767	809	358	920	1.7 ^b	252	349	428	431	— ^a	109	549
	901	— ^a	761	404	1246	992	993	306	735	988	361	385	495	724	787	802	— ^a
	916	1291	653	786	1068	689	1017	765	1356	1783	751	1002	287	404	761	457	130 ^b
	932	1063	532	748	891	370	416	513	602	558	227	— ^a	373	303	363	702	762
	907	517	393	776	405	751	373	709	618	394	399	224	424	358	668	557	691
	923	753	587	602	554	580	420 ^b	699	734	591	587	— ^a	— ^a	— ^a	— ^a	1640	676
	Mean	835	694	728	671	657	575	474	675	641	426	509	473	458	716	758	602
	±S.D.	±237	±452	±280	±342	±181	±275	±205	±294	±501	±167	±255	±206	±132	±234	±502	±282
0.1	917	469	608	829	354	599	1070	532	525	170	600	402	196	431	426	759	368
	920	1106	619	572	— ^a	468	503	616	426	191	433	449	333	517	354	1172	371
	906	693	569	696	322	401	343	297	255	303	675	624	580	529	757	724	— ^a
	911	370 ^b	1668	786	655	1644	600	223	601	612	698	443	1020	430	577	1232	439
	1128	— ^a	— ^a	624	— ^a	1179	370	410	148	290	— ^a	— ^a	262	183	332	519	397
	913	764	407	666	638	1190	1180	223	1329	1873	557	— ^a	757	192	— ^a	1145	1758
	902	483	688	182	553	1470	653	530	1315	1080	217	329	499	456	250	693	196
	928	375	395	310	512	635	594	559	738	675	415	270	597	654	387	668	582
	915	— ^a	— ^a	2.2 ^b	613	454	525	334	318	16.6 ^b	120 ^b	— ^a	171	12.2 ^b	2.1 ^b	0.1 ^b	0.2 ^b
	912	347	433	274	— ^a	309	341	184	102	99	92	— ^a	172	199	357	465	375
	Mean	576	673	494	521	835	618	391	576	531	423	420	459	360	382	738	498
	±S.D.	±263	±416	±281	±135	±488	±290	±160	±440	±571	±232	±122	±284	±201	±208	±376	±499

Table A-29 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Sperm Count (Millions/ml Semen)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
Control	844	788	434	1638	488	1457	546	1926	429	1422	569	1882	1115	637	879	1102
	215	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	910	472	110 ^b	19.0 ^b	438	1020	0.8 ^b	568	0.6 ^b	171	70.0 ^b	297	8.4 ^b	148	340	513
	180	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	909	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	901	614	738	459	644	793	466	349	544	539	449	1063	948	666	564	902
	916	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	932	210	495	355	276	483	249	304	443	258	451	418	464	92.4	276	391
	907	1006	382	374	415	418	375	495	486	508	515	334	648	604	426	279
	923	536	216	394	— ^a	32.6 ^b	— ^a	— ^a	241	225	192	10.6 ^b	— ^a	— ^a	— ^a	— ^a
	Mean	604	396	540	452	701	327	728	357	520	374	667	637	429	497	637
	±S.D.	±273	±220	±560	±133	±501	±213	±678	±202	±467	±197	±689	±433	±284	±239	±350
0.1	917	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	920	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	906	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	911	509	701	897	466	633	588	859	634	307	522	352	680	400	688	890
	1128	396	232	570	— ^a	0.9 ^b	91	240	— ^a	684	429	308	550	0.0 ^b	289	559
	913	244	— ^a	647	— ^a	212	146	271	— ^a	169	50.0 ^b	314	187	7.8 ^b	319	86
	902	340	504	760	637	433	299	691	593	714	747	602	1164	302	752	747
	928	693	656	677	682	565	919	623	632	676	630	760	761	382	632	538
	915	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	912	504	409	596	730	644	410	471	651	658	535	645	357	296	451	678
	Mean	448	500	691	629	415	409	526	628	535	486	497	616	231	522	583
	±S.D.	±157	±190	±121	±115	±259	±308	±244	±24	±235	±239	±196	±341	±181	±196	±276

Table A-29 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Sperm Count (Millions/MI Semen)

Exposure Level—ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	303	310	878	287	674	580 ^b	539	573	461	362	442	341	201	226	291	17.4 ^b
	931	155	466	785	252	406	321	294	563	164	163	532	216	107	— ^a	26.4 ^b	17.2 ^b
	1126	198	— ^a	570	122	153	478	167	210	511	142	605	188	Dead	—	—	—
	919	503	363	417	608	861	570	628	330	269	230	703	262	338	694	7.2 ^b	35.6 ^b
	949	350	— ^a	— ^a	782	437	314	381	330	348	421	449	256	345	370	213	352
	178	128	1124	346	400	553	366	197	560	130	7.8 ^b	— ^a	149	96	— ^a	420	0.8 ^b
	926	1419	— ^a	648	659	372	444	381	384	453	381	324	156	25.8 ^b	16.0 ^b	7.6 ^b	6.0 ^b
	904	— ^a	356	151	302	155	460	148	— ^a	— ^a	436	— ^a	513	— ^a	485	300	— ^a
	930	1317	690	854	0.9 ^b	573	716	183	589	197	297	— ^a	609	316	318	297	333
	932A	1299	— ^a	196	316	— ^a	418	611	720	944	570	519	1070	— ^a	382	667	— ^a
	Mean	630	552	538	373	465	467	353	473	386	301	510	376	204	356	248	109
	±S.D.	±549	±312	±276	±244	±231	±126	±186	±165	±251	±167	±122	±288	±131	±210	±217	±160
10.0	914	— ^a	468	695	210	590	655	663	693	414	641	685	Sacrificed	—	—	—	—
	921	94	356	661	236	486	633	663	562	100 ^b	5.8 ^b	0.6 ^b	1.0 ^b	— ^a	0.2 ^b	0.1 ^b	1.0 ^b
	922	342	321	497	193	266	423	146	741	Dead	—	—	—	—	—	—	—
	908	— ^a	— ^a	0.2 ^b	— ^a	4.6 ^b	8.9 ^b	1.0 ^b	13.0 ^b	Dead	—	—	—	—	—	—	—
	918	1428	— ^a	586	344	850	1701	972	337	0.5 ^b	12.3 ^b	0.4 ^b	3.2 ^b	Dead	—	—	—
	933	1136	809	616	458	158	366	398	165	— ^a	43.4 ^b	28.2 ^b	15.6 ^b	2.4 ^b	1.2 ^b	0.5 ^b	0.1 ^b
	927	639	719	840	560	662	711	373	670	452	Dead	—	—	—	—	—	—
	1125	422	604	284	427	5.0 ^b	376	459	379	357	19.8 ^b	18.2 ^b	2.2 ^b	6.0 ^b	7.5 ^b	0.6 ^b	2.0 ^b
	925	355	— ^a	— ^a	— ^a	398	254	502	537	244	18.8 ^b	9.0 ^b	14.1 ^b	6.0 ^b	0.6 ^b	0.6 ^b	0.6 ^b
	924	219	— ^a	352	— ^a	501	353	494	— ^a	369	— ^a	— ^a	— ^a	7.0 ^b	— ^a	16.6 ^b	6.0 ^b
	Mean	579	546	503	347	392	548	467	455	277	124	124	7.2	5.4	2.4	3.7	1.9
	±S.D.	±468	±198	±255	±141	±281	±456	±272	±250	±170	±254	±275	±7.0	±2.0	±3.4	±7.2	±2.7

Table A-29 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Sperm Count (Millions/ML Semen)

Exposure Level—ppm	Animal Number	Week of Study													
		16	19	24	26	27	28	30	32	34	36	38	40	42	44
1.0	929	376	7.1 ^b	615	212	389	305	339	3.8 ^b	416	394	11.0 ^b	— ^a	— ^a	— ^a
	931	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	1126	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—
	919	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	949	559	356	1129	298	164	692	254	666	354	347	449	176	102	301
	178	158	423	628	644	530	475	400	186	413	693	23.6 ^b	297	573	139
	926	15.6 ^b	11.2 ^b	108	220	161	321	960	688	993	573	1094	1300	1384	— ^a
	904	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	930	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	932A	350	— ^a	182	267	549	918	100	427	— ^a	349	332	179	178	744
	Mean	292	199	532	328	359	542	411	394	544	471	382	488	559	395
	±S.D.	±210	±221	±411	±180	±189	±261	±327	±299	±301	±155	±442	±544	±587	±313
10.0	914	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	921	0.4 ^b	0.4 ^b	0.0 ^b	0.5 ^b	24.4 ^b	0.0 ^b	4.0 ^b	8.2 ^b	6.0 ^b	1.8 ^b	2.0 ^b	8.2 ^b	0.05 ^b	0.6 ^b
	922	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—
	908	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—
	918	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—
	933	0.4 ^b	0.2 ^b	0.0 ^b	0.05 ^b	0.6 ^b	0.7 ^b	0.1 ^b	0.0 ^b	0.4 ^b	0.05 ^b	170 ^b	0.2 ^b	0.4 ^b	0.2 ^b
	927	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—
	1125	0.4 ^b	0.2 ^b	0.0 ^b	0.2 ^b	0.4 ^b	— ^a	0.0 ^b	0.4 ^b	0.9 ^b	0.8 ^b	11.8 ^b	15.3 ^b	3.6 ^b	20.0 ^b
	925	1.0 ^b	0.05 ^b	0.9 ^b	8.1 ^b	13.2 ^b	19.5 ^b	14.4 ^b	17.0 ^b	28.4 ^b	5.2 ^b	7.8 ^b	107	0.2 ^b	14.1 ^b
	924	2.2 ^b	0.6 ^b	1.0 ^b	0.0 ^b	0.0 ^b	0.1 ^b	6.2 ^b	4.6 ^b	2.0 ^b	0.8 ^b	6.5 ^b	13.0 ^b	5.6 ^b	7.0 ^b
	Mean	0.9	0.3	0.4	1.8	7.7	5.1	4.9	6.0	7.5	1.7	39.6	28.7	2.0	8.4
	±S.D.	±0.8	±0.2	±0.5	±3.5	±10.9	±9.6	±5.9	±7.0	±11.9	±2.1	±73.0	±44.1	±2.5	±8.6

[†]Male rabbits were exposed to 0, 0.1 or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aNo sample, or insufficient sample taken.

^bDue to low sperm concentration, counts were unable to be obtained via Coulter Counter, they were obtained via Hemocytometer.

Table A-30

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Volume of Ejaculate (ml)

Exposure Level—ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	0.9	— ^b	0.9	0.5	1.5	1.0	0.4	1.0	0.6	0.4	1.2	1.0	1.0	0.6	1.0	0.7
	215	0.4	0.4	0.7	1.7	0.3	0.9	1.3	1.3	— ^b	Dead	—	—	—	—	—	—
	910	0.9	0.5	— ^a	0.7	0.3	0.5	1.0	1.2	1.0	0.6	0.7	0.8	0.8	0.9	1.0	0.5
	180	— ^a	0.2	— ^a	0.9	0.3	1.3	1.1	1.5	1.5	1.0	1.0	1.4	1.5	2.0	1.0	1.0
	909	1.0	0.8	1.5	1.0	1.0	0.8	0.5	0.7	0.8	1.0	0.6	0.8	0.3	— ^b	0.2	0.8
	901	0.7	0.5	0.3	0.4	0.8	0.6	0.4	1.0	0.7	0.5	1.5	1.4	1.2	0.6	0.8	— ^b
	916	0.5	0.4	0.3	0.3	0.3	0.5	0.3	0.5	0.6	0.5	0.5	2.0	0.9	0.5	0.8	0.5
	932	0.5	0.3	0.8	0.9	1.0	1.0	0.3	1.5	0.7	1.7	— ^b	1.6	1.2	1.5	1.0	1.0
	907	0.4	0.7	0.5	0.5	1.0	0.4	0.9	1.0	0.5	0.8	1.2	1.3	1.2	1.6	1.0	0.7
	923	0.5	0.3	— ^a	1.2	1.5	0.4	0.5	1.1	1.5	0.8	— ^b	— ^b	— ^b	— ^b	0.6	0.5
	Mean	0.6	0.4	0.7	0.8	0.8	0.7	0.7	1.1	0.9	0.8	1.0	1.3	1.0	1.1	0.8	0.7
	±S.D.	±0.2	±0.2	±0.4	±0.4	±0.5	±0.3	±0.4	±0.3	±0.4	±0.4	±0.4	±0.4	±0.4	±0.6	±0.3	±0.2
0.1	917	0.8	0.5	1.3	1.8	1.5	1.4	1.0	1.5	1.5	2.0	1.2	1.5	2.0	1.5	2.3	1.5
	920	0.4	0.5	1.5	1.7	0.7	1.4	0.7	1.3	1.5	1.0	1.5	0.6	0.3	1.5	1.8	1.5
	906	— ^a	1.0	1.1	1.0	1.2	1.5	1.6	1.5	2.0	1.5	1.5	1.2	1.0	1.0	1.3	— ^b
	911	0.8	0.3	— ^a	0.6	0.3	0.3	0.4	0.5	0.8	0.6	0.9	0.7	1.0	1.0	0.4	0.8
	1128	0.3	— ^b	— ^a	— ^b	0.3	0.2	1.0	2.6	1.4	— ^b	1.5	1.5	1.5	2.0	0.8	2.0
	913	0.3	0.3	0.3	0.8	0.4	0.3	0.6	0.2	0.2	0.6	— ^b	0.3	1.4	— ^b	0.5	0.6
	902	0.4	0.4	1.5	0.4	0.5	1.3	0.7	0.4	0.5	1.0	1.5	1.4	1.0	0.9	0.3	1.0
	928	1.0	0.7	1.0	0.7	2.0	1.5	1.4	1.5	0.4	1.5	1.6	1.4	1.5	1.4	1.4	1.5
	915	1.5	— ^b	0.4	1.5	1.7	1.4	0.5	0.4	0.3	0.7	— ^b	1.0	0.3	0.1	0.2	0.2
	912	0.5	0.5	0.7	0.4	0.8	1.5	0.6	0.8	1.2	0.5	— ^b	1.1	1.0	1.5	1.5	0.9
	Mean	0.7	0.5	1.0	1.0	0.9	1.1	0.8	1.1	1.0	1.0	1.4	1.1	1.1	1.2	1.0	1.1
	±S.D.	±0.4	±0.2	±0.5	±0.5	±0.6	±0.6	±0.4	±0.7	±0.6	±0.5	±0.2	±0.4	±0.5	±0.5	±0.7	±0.6

Table A-30 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Volume of Ejaculate (ml)

Exposure Level—ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
Control	844	1.0	0.8	1.0	1.0	0.7	0.6	1.0	0.6	0.9	0.8	1.0	0.8	1.0	1.0	1.0
	215	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	910	1.0	1.9	1.0	0.5	0.4	0.4	0.7	0.3	0.3	0.4	1.6	0.2	1.0	0.6	0.8
	180	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	909	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	901	0.9	1.5	1.3	0.9	1.0	0.7	0.7	0.7	1.2	0.7	1.4	0.6	0.6	1.0	0.4
	916	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	932	1.0	1.4	0.9	0.9	0.7	0.6	0.4	0.6	0.7	0.6	1.9	0.6	0.8	0.8	0.5
	907	0.8	0.4	0.8	1.0	1.2	1.3	0.9	0.8	0.4	1.1	1.0	0.8	0.3	1.0	0.6
	923	0.5	0.5	0.8	— ^b	0.4	— ^b	— ^b	0.5	0.7	0.5	0.3	— ^b	— ^b	— ^b	— ^b
	Mean	0.9	1.1	1.0	0.9	0.7	0.7	0.7	0.6	0.7	0.7	1.2	0.6	0.7	0.9	0.7
	±S.D.	±0.2	±0.6	±0.2	±0.2	±0.3	±0.3	±0.2	±0.2	±0.3	±0.2	±0.6	±0.2	±0.3	±0.2	±0.2
0.1	917	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	920	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	906	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	911	0.7	0.7	0.6	1.2	1.3	1.1	0.6	0.6	0.8	0.8	1.0	1.2	1.5	1.0	1.0
	1128	2.5	1.0	0.05	— ^b	1.2	2.1	1.0	— ^b	0.5	1.5	0.5	1.3	0.3	0.7	1.4
	913	0.5	— ^b	1.3	— ^b	1.5	0.4	0.7	— ^b	1.0	0.7	0.8	1.5	0.8	0.5	1.5
	902	1.0	1.2	1.3	1.2	1.3	0.5	0.6	1.3	0.6	0.6	0.9	1.1	1.0	0.7	1.0
	928	1.5	2.0	2.1	1.5	1.5	1.3	1.6	1.3	0.7	1.4	1.5	1.3	1.2	1.4	1.5
	915	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	912	1.0	1.0	1.3	0.9	0.8	0.6	0.7	0.8	0.5	1.0	0.8	0.9	0.9	1.0	0.5
	Mean	1.2	1.2	1.1	1.2	1.3	1.0	0.9	1.0	0.7	1.0	0.9	1.2	1.0	0.9	1.2
	±S.D.	±0.7	±0.5	±0.7	±0.2	±0.2	±0.6	±0.4	±0.4	±0.2	±0.4	±0.3	±0.2	±0.4	±0.3	±0.4

Table A-30 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Volume of Ejaculate (ml)

Exposure Level—ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	0.3	0.8	0.7	0.7	1.2	0.8	0.8	1.4	0.6	0.7	1.4	0.8	1.0	0.7	0.7	0.7
	931	0.8	0.4	0.6	1.0	0.9	0.8	1.0	0.9	1.4	1.2	0.8	0.5	0.4	1.5	0.7	1.0
	1126	0.5	— ^b	0.4	1.9	2.0	0.7	1.5	2.0	0.6	0.7	0.6	1.0	Dead	—	—	—
	919	0.4	0.5	— ^a	1.0	0.8	0.7	1.0	1.0	1.5	1.0	0.4	1.0	1.4	0.5	1.4	0.8
	949	0.5	0.4	— ^a	1.0	1.0	1.4	0.6	0.8	1.3	1.0	0.5	0.6	0.4	0.7	1.4	0.9
	178	1.0	0.4	0.6	0.7	1.5	0.2	0.4	1.5	0.4	0.4	— ^b	1.0	0.8	— ^b	0.9	0.6
	926	0.4	— ^b	0.3	0.3	0.7	1.0	0.8	0.4	1.0	1.2	1.2	1.5	1.0	0.8	1.0	1.1
	904	0.3	0.3	0.3	0.8	0.8	0.7	0.5	— ^b	— ^b	0.5	— ^b	0.2	— ^b	0.5	0.5	— ^b
	930	0.7	0.3	0.4	0.2	0.6	0.8	1.1	1.5	1.5	1.4	— ^b	1.0	1.0	1.4	1.0	0.4
	932A	0.7	— ^b	0.6	0.5	— ^b	0.5	1.1	0.8	0.6	0.6	0.4	0.5	— ^b	0.4	0.3	— ^b
	Mean	0.6	0.4	0.5	0.8	1.0	0.8	0.9	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.9	0.8
	±S.D.	±0.2	±0.2	±0.2	±0.5	±0.4	±0.3	±0.3	±0.5	±0.4	±0.3	±0.4	±0.4	±0.4	±0.4	±0.4	±0.2
10.0	914	0.2	0.3	0.5	0.4	0.5	0.7	0.8	0.5	0.4	0.5	0.5	Sacrificed		—	—	—
	921	0.3	0.3	1.5	0.6	0.8	0.4	0.6	0.3	0.4	0.2	0.6	0.7	0.2	0.6	1.4	0.4
	922	0.5	0.6	1.4	1.0	1.5	1.3	1.0	0.8	Dead	—	—	—	—	—	—	—
	908	— ^b	— ^a	— ^a	0.4	1.0	0.6	0.4	0.4	Dead	—	—	—	—	—	—	—
	918	0.5	— ^b	0.3	0.3	0.5	0.3	0.7	0.3	1.0	0.4	0.8	0.5	Dead	—	—	—
	933	0.4	0.5	0.5	0.8	0.8	0.6	0.4	0.8	— ^b	1.0	0.5	0.8	0.8	— ^a	1.5	0.9
	927	1.3	0.2	0.4	0.2	0.7	0.7	1.1	1.4	1.2	Dead	—	—	—	—	—	—
	1125	1.0	0.5	1.5	0.8	0.8	1.4	0.6	1.0	0.8	1.0	0.4	0.6	0.5	— ^a	1.4	0.8
	925	0.5	— ^b	— ^b	— ^b	1.9	1.3	1.5	1.0	1.2	1.5	0.6	1.5	1.3	— ^b	1.0	1.0
	924	0.5	— ^b	0.5	— ^b	1.0	1.5	1.0	— ^b	0.8	— ^b	— ^b	— ^b	0.4	2.5	0.9	0.5
	Mean	0.6	0.4	0.8	0.6	0.9	0.9	0.8	0.7	0.8	0.8	0.6	0.8	0.6	1.6	1.2	0.7
	±S.D.	±0.3	±0.2	±0.5	±0.3	±0.4	±0.4	±0.3	±0.4	±0.3	±0.5	±0.1	±0.4	±0.4	±1.3	±0.3	±0.2

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Table A-30 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Volume of Ejaculate (ml)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
1.0	929	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.7	0.4	0.6	— ^b	— ^b	— ^b	— ^b
	931	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1126	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	919	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	949	0.8	0.5	0.8	0.7	0.8	0.6	0.8	0.7	0.7	0.7	0.6	1.0	1.0	1.0	1.0
	178	1.3	1.5	0.8	0.5	0.5	0.8	0.4	1.4	1.5	0.8	1.1	1.2	0.9	1.0	1.0
	926	1.0	2.0	2.0	1.5	1.7	1.1	1.0	0.5	0.8	0.4	0.6	0.5	0.3	— ^b	— ^b
	904	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	930	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	932A	0.3	— ^b	0.7	1.0	0.4	0.5	0.5	0.8	— ^b	1.5	1.5	0.3	0.8	0.9	0.4
	Mean	0.8	1.1	1.0	0.8	0.8	0.7	0.6	0.8	0.9	0.8	0.9	0.8	0.8	1.0	0.8
	±S. D.	±0.4	±0.8	±0.6	±0.4	±0.5	±0.2	±0.2	±0.4	±0.4	±0.4	±0.4	±0.4	±0.3	±0.1	±0.3
10.0	914	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	921	1.4	1.5	1.4	0.8	1.3	0.2	1.3	1.7	0.9	1.0	1.5	1.5	0.7	2.0	1.7
	922	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	908	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	918	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	933	1.4	0.9	0.8	0.4	0.8	0.3	0.6	0.7	0.5	0.4	0.3	0.7	0.6	0.5	0.8
	927	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1125	0.9	0.8	1.0	0.4	0.2	0.3	0.3	0.5	0.4	0.5	0.2	0.4	0.8	0.7	1.0
	925	2.5	2.0	1.6	1.6	1.2	1.3	1.0	1.3	1.0	1.5	1.5	1.4	1.0	1.4	1.5
	924	0.7	0.6	0.2	0.4	0.4	0.5	0.4	0.5	0.8	1.7	1.5	0.4	1.0	0.8	1.0
	Mean	1.4	1.2	1.0	0.7	0.8	0.5	0.7	0.9	0.7	1.0	1.0	0.9	0.8	1.1	1.2
	±S. D.	±0.7	±0.6	±0.5	±0.5	±0.5	±0.4	±0.4	±0.5	±0.2	±0.6	±0.7	±0.5	±0.2	±0.6	±0.4

†Male rabbits were exposed to 0, 0.1 or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

^aA sample was taken, but no volume was recorded.

^bNo sample taken.

Table A-31

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	0	— ^a	69	13	78	63	62	37	56	28	30	87	28	55	63	25
	215	84	80	76	79	14	83	43	9	— ^a	Dead	—	—	—	—	—	—
	910	73	82	80	78	83	66	63	48	64	52	38	38	35	64	85	49
	180	50	82	85	82	46	62	53	79	37	68	60	69	61	69	31	32
	909	83	81	4	80	65	69	37	2	— ^b	8	25	34	67	— ^a	5	60
	901	79	90	15	76	63	82	84	32	84	71	48	34	81	9	62	— ^a
	916	75	79	75	81	26	47	68	44	79	55	17	0	83	— ^b	14	29
	932	70	71	65	65	38	79	58	52	90	24	— ^a	25	70	65	88	82
	907	85	73	82	74	38	66	65	79	67	88	42	45	69	74	30	69
	923	82	81	77	65	81	92	80	87	37	44	— ^a	— ^a	— ^a	— ^a	75	13
	Mean	68	80	63	69	53	71	61	47	64	49	37	42	62	56	50	45
	±S. D.	±26	±5	±29	±21	±24	±13	±15	±29	±20	±25	±14	±27	±20	±24	±31	±24
0.1	917	84	80	67	75	0	76	62	2	44	39	45	84	28	35	34	11
	920	83	78	90	5	63	63	59	66	74	45	93	82	67	49	32	84
	906	75	88	82	75	20	84	53	81	76	25	83	85	81	17	5	— ^a
	911	77	79	79	2	59	18	51	82	82	4	6	0	20	7	0	0
	1128	0	— ^a	91	— ^a	59	48	82	10	74	— ^a	21	7	70	85	67	47
	913	54	68	41	80	43	0	58	20	25	80	— ^a	60	0	— ^a	17	42
	902	72	72	38	82	40	57	64	15	61	80	60	28	87	41	35	71
	928	76	77	37	61	31	27	60	31	16	60	20	71	47	56	58	2
	915	0	— ^a	6	79	55	78	52	85	52	64	— ^a	0	18	0	— ^b	— ^b
	912	82	83	65	— ^b	47	58	19	86	75	88	— ^a	68	17	70	60	44
	Mean	60	78	60	57	42	51	56	48	58	54	47	48	44	40	34	38
	±S. D.	±33	±6	±28	±34	±20	±28	±16	±35	±23	±28	±33	±36	±31	±28	±24	±31

Table A-31 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study													
		16	19	24	26	27	28	30	32	34	36	38	40	42	44
Control	844	21	3	76	15	2	73	3	74	0	35	26	68	14	9
	215	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--
	910	16	21	75	57	56	6	80	50	64	46	79	73	70	93
	180	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	909	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	901	2	13	70	37	7	71	34	1	39	46	27	37	73	27
	916	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	932	77	57	65	86	0	91	7	91	87	89	78	96	94	88
	907	84	1	58	94	56	93	24	53	59	81	55	87	36	31
	923	12	8	33	-- ^a	3	-- ^a	-- ^a	1	26	26	30	-- ^a	-- ^a	-- ^a
	Mean	35	17	63	58	21	67	30	45	46	54	49	72	57	50
	±S.D.	±36	±21	±16	±33	±27	±35	±31	±37	±31	±25	±25	±22	±32	±38
0.1	917	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	920	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	906	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	911	29	48	56	30	21	6	0	21	47	49	50	78	37	64
	1128	2	29	92	-- ^a	-- ^b	0	27	-- ^a	93	65	0	27	-- ^b	93
	913	0	-- ^a	0	-- ^a	0	0	0	-- ^a	0	0	0	4	0	22
	902	84	74	62	26	57	44	49	55	5	33	67	85	86	76
	928	0	77	12	25	15	38	5	1	75	29	20	93	64	41
	915	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--
	912	0	30	0	0	9	0	0	0	46	15	84	90	79	39
	Mean	19	52	37	20	20	15	14	19	44	32	37	63	53	56
	±S.D.	±34	±23	±38	±14	±22	±21	±20	±26	±37	±23	±36	±38	±35	±26

Table A-31 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	77	78	83	69	0	34	58	79	71	68	33	22	10	57	40	24
	931	77	79	84	26	36	74	69	42	58	76	48	58	63	2	29	29
	1126	0	— ^a	77	63	72	86	64	89	81	79	48	0	Dead	—	—	—
	919	79	74	78	84	67	78	59	76	79	6	0	10	67	58	53	45
	949	0	82	87	74	91	79	81	15	75	79	66	0	3	65	82	31
	178	72	83	10	72	60	67	31	40	21	0	— ^a	12	55	— ^a	8	— ^b
	926	73	— ^a	5	77	30	21	46	40	71	22	45	4	16	30	20	47
	904	0	79	70	0	62	33	19	— ^a	— ^a	26	— ^a	32	— ^a	5	27	— ^a
	930	70	64	68	— ^b	61	6	65	65	55	67	— ^a	50	44	73	27	43
	932A	70	— ^a	62	0	— ^a	22	70	72	47	41	32	51	— ^a	79	32	— ^a
	Mean	52	77	62	52	53	50	56	58	62	46	39	24	37	46	35	36
	±S.D.	±36	±6	±30	±34	±27	±30	±19	±24	±19	±31	±20	±22	±27	±30	±21	±10
10.0	914	73	73	78	83	65	25	60	20	77	53	69	Sacrificed	—	—	—	—
	921	88	80	0	89	89	64	86	64	6	0	0	— ^b	— ^b	— ^b	— ^b	— ^b
	922	79	71	77	77	87	91	84	30	Dead	—	—	—	—	—	—	—
	908	— ^a	0	0	— ^b	34	30	— ^b	17	Dead	—	—	—	—	—	—	—
	918	63	— ^a	79	83	55	5	64	73	— ^b	— ^b	— ^b	0	Dead	—	—	—
	933	81	0	68	80	90	77	43	63	— ^a	21	2	9	— ^b	— ^b	— ^b	— ^b
	927	66	80	28	61	32	52	79	50	64	Dead	—	—	—	—	—	—
	1125	68	83	80	86	21	58	70	10	27	7	5	23	0	— ^b	— ^b	— ^b
	925	73	— ^a	— ^a	— ^a	82	79	76	69	36	32	60	28	6	— ^a	— ^b	— ^b
	924	72	— ^a	81	— ^a	90	73	72	— ^a	14	— ^a	— ^a	— ^a	— ^b	— ^b	0	0
	Mean	74	55	54	80	64	55	70	44	37	23	27	15	3	— ^c	0 ^d	0 ^d
	±S.D.	±8	±38	±35	±9	±27	±27	±13	±25	±28	±21	±34	±13	±4			

Table A-31 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
1.0	929	28	46	86	70	34	96	38	-- ^b	7	74	4	-- ^a	-- ^a	-- ^a	-- ^a
	931	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1126	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	919	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	949	74	74	23	73	4	10	68	16	83	52	58	1	79	82	24
	178	72	80	19	0	31	8	38	63	2	17	0	88	55	68	31
	926	77	25	70	66	46	83	0	1	12	34	24	62	33	-- ^a	-- ^a
	904	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	930	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	932A	1	-- ^a	5	15	36	4	1	0	-- ^a	4	2	0	5	21	0
	Mean	50	56	41	45	30	40	29	20	26	36	18	38	43	57	18
	±S. D.	±34	±26	±35	±34	±16	±45	±29	±30	±38	±28	±24	±44	±32	±32	±16
10.0	914	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	921	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	0	0	4	0	5	14	6	5	0
	922	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	908	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	918	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	933	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	44	-- ^b	-- ^b	-- ^b	-- ^b	16	16	18	4
	927	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1125	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	38	49	28	23	14	8
	925	-- ^b	-- ^b	-- ^b	38	3	7	33	-- ^b	14	34	6	60	57	43	38
	924	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	6	-- ^b	2	0	0	13	0	19	3
	Mean	-- ^c	-- ^c	-- ^c	38 ^d	3 ^d	7 ^d	21	0 ^d	7	18	15	26	20	20	11
	±S. D.							±21		±6	±21	±23	±20	±22	±14	±16

†Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

^aNo sample taken.

^bInsufficient number of sperm to count for motility.

^cNo values were available for mean ± S.D.

^dNo mean taken: only a single value was available.

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Table A-32

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Non-Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	0	— ^a	24	83	14	32	1	54	25	72	60	10	62	25	25	53
	215	6	5	16	18	18	10	47	74	— ^a	Dead	—	—	—	—	—	—
	910	8	8	10	10	6	13	13	15	33	13	40	35	59	6	9	37
	180	16	10	7	12	36	14	28	7	44	15	24	26	32	9	37	33
	909	6	14	56	9	28	20	55	81	— ^b	54	60	23	31	— ^a	76	23
	901	7	6	4	21	24	7	2	61	10	25	27	63	8	42	29	— ^a
	916	7	11	15	14	56	43	21	49	11	41	78	49	5	— ^b	77	43
	932	12	16	26	26	58	10	20	39	8	39	— ^a	39	25	17	10	16
	907	2	17	9	15	58	27	16	10	25	10	57	10	25	11	65	16
	923	12	12	23	20	14	1	11	9	9	55	— ^a	— ^a	— ^a	— ^a	18	15
	Mean	8	11	19	23	31	18	21	40	21	36	49	32	31	18	38	30
	±S.D.	±5	±4	±15	±22	±20	±13	±18	±28	±13	±22	±20	±18	±21	±13	±27	±14
0.1	917	5	11	21	18	0	16	15	64	36	51	25	11	58	49	58	67
	920	8	14	6	76	8	22	27	18	11	40	5	13	30	38	60	8
	906	9	6	9	18	77	2	36	6	9	55	3	10	7	72	44	— ^a
	911	6	12	10	88	34	51	37	5	3	65	63	14	79	81	5	88
	1128	0	— ^a	8	— ^a	35	43	7	74	21	— ^a	26	34	15	9	5	13
	913	7	8	48	14	30	78	21	46	65	10	— ^a	24	32	— ^a	74	55
	902	11	16	26	12	48	17	25	72	30	15	40	59	4	54	54	24
	928	13	12	14	25	62	66	21	33	77	15	58	13	48	32	21	68
	915	0	— ^a	10	5	34	6	31	6	11	14	— ^a	44	23	0	— ^b	— ^b
	912	6	11	19	— ^b	43	15	73	2	6	8	— ^a	26	80	14	24	45
	Mean	6	11	17	32	37	32	29	33	27	30	31	25	38	39	38	46
	±S.D.	±4	±3	±13	±32	±23	±26	±18	±29	±26	±22	±24	±16	±28	±28	±25	±29

Table A-32 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Non-Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
Control	844	61	89	9	39	20	11	63	5	61	61	43	26	81	82	38
	215	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	910	80	68	23	41	40	35	7	20	22	36	9	8	30	5	42
	180	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	909	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	901	7	81	25	59	85	26	66	20	35	33	72	59	23	64	42
	916	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	932	17	36	26	13	75	5	63	4	3	10	12	2	1	8	10
	907	9	96	40	6	33	1	43	29	31	17	37	10	57	60	34
	923	82	19	64	-- ^a	80	-- ^a	-- ^a	33	49	45	34	-- ^a	-- ^a	-- ^a	-- ^a
	Mean	43	65	31	32	56	16	48	18	34	34	34	21	38	44	33
±S.D.	±36	±31	±19	±22	±28	±14	±25	±12	±20	±18	±23	±23	±31	±35	±13	
0.1	917	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	920	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	906	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	911	64	19	39	65	49	85	3	61	49	48	40	11	48	27	39
	1128	94	69	7	-- ^a	-- ^b	22	25	-- ^a	3	30	14	57	-- ^b	6	89
	913	76	-- ^a	41	-- ^a	0	0	81	-- ^a	7	15	2	42	31	47	49
	902	11	10	32	65	25	54	30	24	83	64	17	1	8	10	26
	928	21	16	79	70	70	53	52	87	15	65	78	4	27	39	57
	915	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	912	76	70	95	58	51	70	97	8	30	75	22	4	17	56	22
	Mean	57	37	49	64	39	47	48	45	31	50	29	20	26	31	47
±S.D.	±33	±30	±32	±5	±27	±31	±36	±36	±30	±23	±27	±24	±15	±20	±24	

Table A-32 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Non-Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	6	13	12	24	0	24	32	16	23	25	64	38	76	24	53	41
	931	11	12	10	61	40	9	10	33	21	15	42	18	28	32	14	42
	1126	0	— ^a	11	37	4	3	31	3	17	13	42	15	Dead	—	—	—
	919	14	11	8	11	9	2	32	3	6	38	3	62	25	18	16	17
	949	0	9	6	18	3	13	7	70	16	8	18	0	74	23	5	62
	178	9	9	81	21	18	11	8	29	35	0	— ^a	68	29	— ^a	75	— ^b
	926	12	— ^a	15	17	61	70	44	47	16	72	35	68	12	23	30	32
	904	0	11	15	38	25	66	59	— ^a	— ^a	64	— ^a	49	— ^a	68	30	— ^a
	930	6	7	16	— ^b	38	86	14	9	22	27	— ^a	39	11	10	47	26
	932A	12	— ^a	27	78	— ^a	86	24	0	49	57	61	44	— ^a	10	35	— ^a
	Mean	7	10	20	34	22	37	26	23	23	32	38	40	36	26	34	37
	±S.D.	±5	±2	±22	±22	±21	±35	±17	±24	±12	±25	±22	±23	±27	±18	±22	±16
10.0	914	6	18	17	12	15	20	31	57	11	32	24	Sacrificed	—	—	—	—
	921	11	10	94	9	1	16	7	23	49	18	10	— ^b	— ^b	— ^b	— ^b	— ^b
	922	7	23	9	14	4	4	0	65	Dead	—	—	—	—	—	—	—
	908	— ^a	0	0	— ^b	17	61	— ^b	31	Dead	—	—	—	—	—	—	—
	918	20	— ^a	10	10	29	51	8	9	— ^b	— ^b	— ^b	0	Dead	—	—	—
	933	13	0	25	16	1	12	27	29	— ^a	23	79	30	— ^b	— ^b	— ^b	— ^b
	927	22	9	68	32	64	30	13	27	18	Dead	—	—	—	—	—	—
	1125	18	12	8	10	60	25	19	61	33	76	77	24	12	— ^b	— ^b	— ^b
	925	8	— ^a	— ^a	— ^a	14	12	9	13	48	53	20	47	24	— ^a	— ^b	— ^b
	924	12	— ^a	8	— ^a	6	3	17	— ^a	41	— ^a	— ^a	— ^a	— ^b	— ^b	1	0
	Mean	13	10	26	15	21	23	14	35	33	40	42	25	18	c	1d	0d
	±S.D.	±6	±8	±32	±8	±23	±19	±10	±21	±16	±24	±33	±19	±8			

Table A-32 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Non-Progressively Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
1.0	929	63	43	8	27	30	4	57	-- ^b	82	21	50	-- ^a	-- ^a	-- ^a	-- ^a
	931	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1126	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	919	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	949	14	20	48	14	61	84	21	73	6	43	6	98	13	14	55
	178	11	5	76	19	62	74	8	6	90	79	1	11	25	9	46
	926	6	47	18	15	43	9	5	17	81	65	67	38	63	-- ^a	-- ^a
	904	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	930	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	932A	90	-- ^a	77	44	42	91	43	20	-- ^a	58	83	96	78	77	41
	Mean	37	29	45	24	48	52	27	29	65	53	41	61	45	33	47
	±S. D.	±38	±20	±32	±12	±14	±42	±22	±30	±39	±22	±36	±43	±31	±38	±7
10.0	914	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	921	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	10	6	10	0	33	1	48	25	26
	922	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	908	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	918	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	933	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	24	-- ^b	-- ^b	-- ^b	-- ^b	4	23	34	34
	927	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1125	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	22	35	10	36	14	40
	925	-- ^b	-- ^b	-- ^b	17	5	58	18	-- ^b	43	51	67	14	40	36	37
	924	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	36	-- ^b	30	0	60	44	10	38	50
	Mean	-- ^c	-- ^c	-- ^c	17 ^d	5 ^d	58 ^d	22	6 ^d	28	18	49	15	31	29	37
	±S. D.							±11		±17	±24	±17	±17	±15	±10	±9

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

--^aNo sample taken.

^bInsufficient number of sperm to count for motility.

^cNo values were available for mean ± S.D.

^dNo mean taken: only a single value was available.

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Table A-33

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Non-Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	100	— ^a	7	4	8	5	37	9	19	0	10	3	10	20	12	22
	215	10	15	8	3	68	7	10	17	— ^a	Dead	—	—	—	—	—	—
	910	19	10	10	12	11	21	24	37	3	35	22	27	6	30	6	16
	180	34	8	8	6	15	24	19	14	19	17	16	5	7	22	32	35
	909	11	5	40	11	7	11	8	17	— ^b	38	15	43	2	— ^a	19	16
	901	14	4	81	3	13	11	14	7	6	4	25	3	11	49	9	— ^a
	916	18	10	10	5	14	10	11	7	10	5	5	51	12	— ^b	10	28
	932	18	13	9	9	4	11	22	9	2	37	— ^a	37	5	18	2	2
	907	13	10	9	11	4	7	19	11	8	2	1	45	6	15	5	15
	923	6	7	0	15	5	7	9	4	54	2	— ^a	— ^a	— ^a	— ^a	7	72
	Mean	24	9	18	8	15	11	17	13	15	16	13	27	7	26	11	26
	±S.D.	±28	±4	±24	±4	±19	±6	±9	±9	±17	±16	±9	±20	±3	±12	±9	±21
0.1	917	11	9	12	7	100	8	23	34	20	10	30	5	14	16	8	22
	920	9	8	4	19	29	15	14	16	15	15	2	5	3	13	8	8
	906	16	6	9	7	3	14	11	13	15	20	14	5	12	11	51	— ^a
	911	17	9	11	10	7	31	12	13	15	31	31	86	1	12	95	12
	1128	100	— ^a	1	— ^a	6	9	11	16	5	— ^a	53	59	15	6	28	40
	913	39	24	11	6	27	22	21	34	10	10	— ^a	16	68	— ^a	9	3
	902	17	12	36	6	12	26	12	13	9	5	0	13	9	5	11	5
	928	11	11	49	14	7	7	19	36	7	25	22	16	5	12	21	30
	915	100	— ^a	84	16	11	16	17	9	37	22	— ^a	56	59	100	— ^b	— ^b
	912	12	6	16	— ^b	10	27	8	12	19	4	— ^a	6	3	16	6	11
	Mean	33	11	23	11	21	18	15	20	15	16	22	27	19	21	26	16
	±S.D.	±36	±6	±26	±5	±29	±8	±5	±10	±9	±9	±18	±29	±24	±30	±30	±13

Table A-33 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Non-Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
Control	844	18	8	15	46	78	16	34	21	39	4	31	6	5	9	4
	215	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	910	4	11	2	3	4	59	13	30	14	18	12	19	17	2	12
	180	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	909	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	901	91	6	5	4	8	3	0	79	26	21	1	4	4	9	7
	916	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	932	6	7	9	1	25	4	30	5	10	1	10	2	5	4	25
	907	7	37	2	0	11	6	33	18	10	2	8	3	7	8	4
	923	6	73	3	-- ^a	17	-- ^a	-- ^a	66	25	31	37	-- ^a	-- ^a	-- ^a	-- ^a
	Mean	22	24	6	11	24	18	22	36	21	13	16	7	8	6	10
	±S.D.	±34	±27	±5	±20	±28	±24	±15	±29	±11	±12	±14	±7	±5	±3	±9
0.1	917	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	920	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	906	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	911	7	33	5	5	30	9	97	18	4	3	10	11	15	9	12
	1128	4	2	1	-- ^a	-- ^b	78	48	-- ^a	4	5	87	16	-- ^b	1	8
	913	24	-- ^a	59	-- ^a	100	100	19	-- ^a	93	85	98	54	69	31	48
	902	5	16	6	9	16	2	21	21	12	3	6	14	5	14	1
	928	79	7	9	5	16	9	43	12	10	6	2	7	9	20	3
	915	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	912	24	0	5	42	40	30	3	92	24	12	4	6	4	6	10
	Mean	24	12	14	15	40	38	38	36	24	19	34	18	20	14	14
	±S.D.	±28	±13	±22	±18	±35	±41	±33	±38	±34	±32	±45	±18	±28	±11	±17

Table A-33 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Proportion of Non-Motile Sperm (%)

Exposure Level—ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	17	9	5	7	100	42	10	5	6	7	3	40	14	19	7	32
	931	12	9	6	13	24	17	21	25	21	9	10	24	9	66	57	25
	1126	100	— ^a	12	0	24	11	5	8	2	8	10	85	Dead	—	—	—
	919	7	15	14	5	24	20	9	21	15	56	97	28	9	24	31	38
	949	100	9	7	9	6	8	12	15	9	13	16	100	23	12	13	7
	178	19	8	9	7	22	22	61	31	44	100	— ^a	20	16	— ^a	17	— ^b
	926	15	— ^a	80	6	9	9	10	13	13	6	20	28	72	47	50	21
	904	100	10	8	62	13	1	22	— ^a	— ^a	11	— ^a	19	— ^a	27	42	— ^a
	930	24	29	16	— ^b	1	8	21	26	23	6	— ^a	11	45	17	26	31
	932A	7	— ^a	11	22	— ^a	12	6	28	4	3	7	5	— ^a	11	33	— ^a
	Mean	40	13	17	14	25	15	18	19	15	22	23	36	27	28	31	26
	±S.D.	±42	±8	±22	±19	±30	±11	±16	±9	±13	±31	±33	±31	±23	±19	±17	±11
10.0	914	21	9	5	5	20	55	9	23	12	15	7	Sacrificed	—	—	—	—
	921	1	10	6	2	10	20	7	13	45	82	90	— ^b	— ^b	— ^b	— ^b	— ^b
	922	14	6	14	9	9	5	16	5	Dead	—	—	—	—	—	—	—
	908	— ^a	100	100	— ^b	49	9	— ^b	52	Dead	—	—	—	—	—	—	—
	918	7	— ^a	11	7	16	44	28	16	— ^b	— ^b	— ^b	100	Dead	—	—	—
	933	6	100	7	4	9	11	30	8	— ^a	56	19	61	— ^b	— ^b	— ^b	— ^b
	927	12	11	4	8	4	18	8	23	18	Dead	—	—	—	—	—	—
	1125	14	5	12	4	19	17	11	29	40	18	18	53	88	— ^b	— ^b	— ^b
	925	19	— ^a	— ^a	— ^a	4	9	15	18	16	15	20	25	70	— ^a	— ^b	— ^b
	924	12	— ^a	11	— ^a	4	24	11	— ^a	45	— ^a	— ^a	— ^a	— ^b	— ^b	99	100
	Mean	12	34	19	6	14	21	15	21	29	37	31	60	79	c	99 ^d	100 ^d
	±S.D.	±6	±45	±31	±2	±14	±16	±8	±14	±16	±30	±34	±31	±13			

Table A-33 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Proportion of Non-Motile Sperm (%)

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
1.0	929	9	11	7	3	36	0	5	-- ^b	11	5	46	-- ^a	-- ^a	-- ^a	-- ^a
	931	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1126	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	919	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	949	10	6	29	13	35	6	11	11	11	5	36	1	8	4	21
	178	17	15	5	81	7	18	54	31	8	4	99	1	20	23	23
	926	17	28	12	19	12	8	95	82	7	2	9	0	4	-- ^a	-- ^a
	904	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	930	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	932A	9	-- ^a	18	41	22	5	56	80	-- ^a	38	15	4	17	2	59
	Mean	12	15	14	31	22	7	44	51	9	11	41	2	12	10	34
	±S.D.	±4	±9	±10	±31	±13	±7	±37	±36	±2	±15	±36	±2	±8	±12	±21
10.0	914	Sacrificed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	921	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	90	94	86	100	62	85	48	70	74
	922	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	908	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	918	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	933	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	32	-- ^b	-- ^b	-- ^b	-- ^b	80	61	48	62
	927	Dead	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1125	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	40	16	62	41	72	52
	925	-- ^b	-- ^b	-- ^b	45	92	35	49	-- ^b	43	15	27	26	3	22	25
	924	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	-- ^b	58	-- ^b	68	100	40	43	90	43	47
	Mean	-- ^c	-- ^c	-- ^c	45 ^d	92 ^d	35 ^d	57	94 ^d	66	64	36	59	49	51	52
	±S.D.							±24		±22	±43	±20	±25	±32	±21	±18

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed 50 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

^aNo sample taken.

^bInsufficient number of sperm to count for motility.

^cNo values were available for mean ± S.D.

^dNo mean taken: only a single value was available.

Table A-34

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Viability of Sperm (%)^a

Exposure Level--ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Control	844	93	— ^c	89	91	83	91	47	78	92	93	86	92	87	84	89	87
	215	95	92	95	96	44	90	74	92	— ^c	Dead	—	—	—	—	—	—
	910	88	89	90	88	31	89	90	94	82	79	63	88	92	84	75	87
	180	89	96	45	82	73	75	81	85	82	85	86	88	84	63	52	64
	909	70	89	94	97	80	83	88	87	— ^d	93	90	87	81	— ^c	91	84
	901	86	91	97	96	90	92	73	93	86	90	92	97	93	90	96	— ^c
	916	99	97	96	94	88	95	76	86	90	94	98	47	94	90	96	68
	932	90	93	94	90	87	88	82	84	86	89	— ^c	86	84	94	97	98
	907	88	92	91	95	88	92	81	94	96	89	94	76	91	84	93	100
	923	75	96	90	91	95	88	83	93	92	84	— ^c	— ^c	— ^c	— ^c	89	74
	Mean	87	93	88	92	76	88	78	89	88	88	87	83	88	84	86	83
	±S.D.	±9	±3	±15	±5	±21	±6	±12	±5	±5	±5	±11	±16	±5	±10	±14	±13
0.1	917	94	86	84	89	66	87	86	82	94	77	94	92	92	82	80	82
	920	94	92	92	94	59	90	73	95	93	86	91	96	86	92	83	86
	906	99	96	75	89	96	82	83	94	95	90	92	98	81	92	76	— ^c
	911	89	80	87	88	91	44	78	91	85	72	93	82	92	82	68	87
	1128	71	— ^c	80	— ^c	91	81	79	86	89	— ^c	60	84	99	97	84	90
	913	81	73	78	91	90	76	83	79	66	96	— ^c	92	74	— ^c	96	82
	902	93	93	78	65	88	81	84	80	75	80	90	89	92	88	94	94
	928	83	96	8	89	90	88	89	81	92	94	96	82	94	84	88	96
	915	— ^b	— ^c	50	88	80	79	78	84	85	79	— ^c	98	36	— ^d	— ^d	— ^d
	912	90	91	81	— ^d	89	93	77	86	99	90	— ^c	85	90	96	37	82
	Mean	88	88	71	87	84	80	81	86	87	85	88	90	84	89	78	87
	±S.D.	±8	±8	±25	±9	±12	±14	±5	±6	±10	±8	±12	±6	±18	±6	±18	±6

Table A-34 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Viability of Sperm (%)^a

Exposure Level—ppm	Animal Number	Week of Study													
		16	19	24	26	27	28	30	32	34	36	38	40	42	44
Control	844	80	94	76	89	76	93	59	81	61	88	73	85	68	94
	215	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—
	910	90	92	66	99	97	— ^d	95	60	89	73	93	60	98	88
	180	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	909	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	901	96	92	90	96	99	97	92	94	83	93	100	85	53	82
	916	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	932	90	97	86	96	94	95	95	98	89	89	94	92	76	54
	907	92	95	80	100	93	98	88	91	89	97	88	98	42	87
	923	89	39	77	— ^c	69	— ^c	— ^c	71	84	71	71	— ^c	— ^c	— ^c
	Mean	90	85	79	96	88	96	86	82	82	85	86	84	67	81
	±S.D.	±5	±22	±8	±4	±12	±2	±15	±15	±11	±11	±12	±14	±22	±16
0.1	917	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	920	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	906	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	911	97	94	80	98	99	92	92	88	90	93	69	79	79	86
	1128	91	93	94	— ^c	— ^d	85	84	— ^c	99	93	29	91	— ^d	92
	913	85	— ^c	77	— ^c	43	21	88	— ^c	35	37	47	87	71	86
	902	96	87	81	93	92	68	55	81	79	79	61	91	90	93
	928	94	93	89	98	100	93	76	94	91	90	78	89	83	96
	915	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—
	912	95	93	93	96	97	97	98	93	80	96	34	96	87	93
	Mean	93	92	86	96	86	76	82	89	79	81	53	89	82	91
	±S.D.	±4	±3	±7	±2	±24	±29	±15	±6	±23	±22	±20	±6	±7	±4

Table A-34 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Viability of Sperm (%)^a

Exposure Level—ppm	Animal Number	Week of Study															
		-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0	929	97	97	91	98	98	90	81	86	97	80	83	92	79	81	83	94
	931	93	94	91	96	55	79	79	49	90	92	85	94	53	32	66	50
	1126	— ^b	— ^c	87	93	79	88	93	96	82	93	95	92	Dead	—	—	—
	919	90	86	83	84	86	88	72	88	94	73	71	76	85	51	82	66
	949	95	80	87	90	57	75	90	85	81	79	79	85	96	89	78	94
	178	99	94	12	92	78	79	44	72	65	12	— ^c	58	81	— ^c	71	— ^d
	926	95	— ^c	80	80	88	80	90	83	88	46	75	79	81	64	52	66
	904	78	87	90	38	— ^b	83	73	— ^c	— ^c	80	— ^c	76	— ^c	57	57	— ^c
	930	91	85	97	— ^d	90	86	78	80	90	89	— ^c	87	81	90	72	72
	932A	— ^b	— ^c	96	87	— ^c	80	95	80	92	83	93	85	— ^c	89	85	— ^c
	Mean	92	89	81	84	79	83	80	80	86	73	83	82	79	69	72	74
	±S. D.	±6	±6	±25	±18	±15	±5	±15	±13	±10	±25	±9	±11	±13	±22	±12	±17
10.0	914	76	90	89	93	82	82	77	77	90	82	84	Sacrificed	—	—	—	—
	921	88	93	91	94	96	91	87	92	62	50	8	— ^d	— ^d	— ^d	— ^d	— ^d
	922	92	81	97	79	95	94	75	81	Dead	—	—	—	—	—	—	—
	908	— ^c	92	— ^d	— ^d	— ^d	— ^d	80	81	Dead	—	—	—	—	—	—	—
	918	— ^b	— ^c	81	94	69	89	86	72	— ^d	26	— ^d	25	Dead	—	—	—
	933	83	94	87	85	80	80	78	69	— ^c	17	40	49	21	— ^d	— ^d	— ^d
	927	94	86	91	93	95	69	72	90	86	Dead	—	—	—	—	—	—
	1125	84	85	93	93	74	89	86	92	77	75	79	64	— ^d	— ^d	— ^d	— ^d
	925	— ^d	— ^c	— ^c	— ^c	92	49	59	80	91	43	— ^b	59	41	— ^c	— ^d	— ^d
	924	93	— ^c	80	— ^c	87 ^g	38	81	— ^c	80	— ^c	— ^c	— ^c	— ^d	— ^d	5	— ^d
	Mean	87	89	89	90	86	76	78	82	81	49	53	49	31	— ^e	5 ^f	— ^e
	±S. D.	±6	±5	±6	±6	±10	±20	±8	±8	±11	±26	±36	±17	±14			

Table A-3⁴ (Continued)DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]Rabbit: Viability of Sperm (%)^a

Exposure Level--ppm	Animal Number	Week of Study														
		16	19	24	26	27	28	30	32	34	36	38	40	42	44	46
1.0	929	91	99	97	93	98	95	94	— ^d	41	100	93	— ^c	— ^c	— ^c	— ^c
	931	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1126	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	919	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	949	82	95	100	95	97	89	96	86	90	92	81	79	84	89	88
	178	88	92	95	95	87	70	72	67	31	78	24	90	80	95	27
	926	89	81	78	95	97	94	92	97	88	84	89	85	83	— ^c	— ^c
	904	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	930	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	932A	70	— ^c	63	83	94	96	57	93	— ^c	92	99	83	78	93	89
	Mean	84	92	87	92	95	89	82	86	62	89	77	84	81	92	68
	±S.D.	±8	±8	±16	±5	±4	±11	±17	±13	±31	±8	±30	±4	±3	±3	±36
10.0	914	Sacrificed	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	921	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	46	50	59	— ^d	— ^d	— ^d
	922	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	908	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	918	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	933	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	0	— ^d	— ^d	— ^d	— ^d	30	— ^d	— ^d	— ^d
	927	Dead	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1125	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	25	56	68	60	71	55
	925	— ^d	— ^d	— ^d	36	51	47	92	— ^d	59	80	64	62	71	73	79
	924	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	— ^d	34	35	38	41	74	— ^d	— ^d	77
	Mean	0 ^f	— ^e	— ^e	36 ^f	51 ^f	47 ^f	46	34 ^f	47	47	53	59	66	72	70
	±S.D.							±65		±17	±23	±10	±17	±8	±1	±13

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aDetermined by staining sperm with cosin-aniline blue stain.

^bNo slides were available for a viability count.

^cNo sample taken.

^dInsufficient number of sperm to count for viability.

^eNo values were available for mean ± S.D.

^fNo mean taken: only a single value was available.

^gThe value recorded was apparently incorrect and therefore was not included in the calculation of the mean.

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Table A-35

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]Individual Observations Made at the Time of Necropsy of
Unexposed Female Rabbits Mated with DBCP Exposed Males

Week of Study: 14

Exposure Level—ppm	Animal Number Male	Animal Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
Control	844	63	11	7	1	36	14
	910	41	12	10	0	17	0
	909	36	non-pregnant				
	916	830	non-pregnant				
	932	53	10	10	0	0	0
	180	15	non-pregnant				
	901	27	10	10	1	0	10
	907	32	9	9	0	0	0
	923	841	9	9	2	0	22
	Mean±S.D.		10±1	9±1	0.7±0.8	9±15	8±9
Total fertile males = 6							
0.1	917	28	17	11	0	35	0
	920	29	11	9	1	18	11
	911	37	8	8	0	0	0
	1128	12	11	9	2	18	22
	902	13	7	7	1	0	14
	913	47	11	10	1	9	10
	928	48	12	10	1	17	10
	915	20	8	8	2	0	25
	912	16	10	7	0	30	0
	Mean±S.D.		10±3	9±1	0.9±0.8	14±13	10±9
Total fertile males = 9							
1.0	929	82 ^a	9 ^b	3	0	0 ^b	0
	931	39	7	5	0	29	0
	919	30	14	9	1	36	11
	949	87	8	8	0	0	0
	178	46	non-pregnant				
	930	33	10	5	0	50	0
	932A	72	9	8	1	11	12
	Mean±S.D.		8±4	6±2	0.3±0.5	21±20	4±6
10.0	921	59	non-pregnant				
	933	44	non-pregnant				
	1125	52	non-pregnant				
	924	61	non-pregnant				
	925	62	non-pregnant				
	Mean±S.D.		— ^c	— ^c	— ^c	— ^c	— ^c
Total fertile males = 0							

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery. During the 14th week of the study, each male rabbit was allowed to mate with one unexposed female rabbit. The females were sacrificed on day 28 of gestation.

^aThe left horn of the uterus from Animal No. 82 was not continuous. The anterior portion of the left horn was enlarged and was attached to the left ovary. The posterior portion of the left horn was of normal size. Both portions of the left horn did not have any implantations.

^bAs the left uterine horn was not continuous, only the 3 corpora lutea observed from the right uterine horn were included in this summary.

^cNo data available.

Table A-36

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]Individual Observations Made at the Time of Necropsy of
Unexposed Female Rabbits Mated With DBCP Exposed Males

Week of Study: 41

Exposure Level—ppm	Animal Number Male	Animal Number Female	Corpora Lutea	Implantations	Resorptions	X Pre-imp Loss	X Post-imp Loss
Control	844	223	10	7	1	15	11
	237	12	12	12	1		
	910	218 ^a	10	6	0	20	0
		2322	10	11	0		
	932	184	10	7	1	60	57
		2323	9	1	1		
	901	253	non-pregnant				
		259	8	9	1	14	14
		269	15	11	2		
	907	258	Delivered early			11	0
		220	9	8	0		
Mean±S.D.			10±1	8±2	0.7±0.7	24±20	16±24
			Total fertile males = 5				
			Total fertile males impregnating two females = 4				
0.1	911	222	7	7	0	0	5
		268	10	10	1		
	1128	173	12	3	1	38	21
		263	11	11	1		
	902	234	11	11	1	5	10
		266	10	9	1		
	913	262	9	9	0	28	0
		187	7	3	0		
	928	219	9	8	0	42	34
		265	11	3	2		
	912	264	10	10	2	20	18
		278	10	6	1		
Mean±S.D.			10±2	8±2	0.8±0.5	22±17	15±12
			Total fertile males = 6				
			Total fertile males impregnating two females = 6				
1.0	949	257	10	10	1	0	5
		270	9	9	0		
	178	236	12	5	0	29	0
		217	9	10	0		
	926	204	11	5	0	28	6
		2364	9	9	1		
	932A	2320	8	5	0	19	0
		2367	8	8	0		
Mean±S.D.			10±1	8±2	0.2±0.3	19±13	3±3
			Total fertile males = 4				
			Total fertile males impregnating two females = 4				
10.0	921	256	non-pregnant				
		277	non-pregnant				
	933	216	non-pregnant				
		261	non-pregnant				
	1125	260	non-pregnant				
		271	non-pregnant				
	924	276	10	6	0	40	0
		238	non-pregnant				
	925	202	14	13	1	4	14
		279	15	15	3		
Mean±S.D.			12±3	10±6	1.0±1.4	22±26	7±10
			Total fertile males = 2				
			Total fertile males impregnating two females = 1				

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery. During the 41st week of the study, each male was allowed to mate with two unexposed female rabbits. The females were sacrificed on day 29 of gestation.

^aOne fetus from this female exhibited multiple external malformations, including short trunk, acardia, rotated hind limbs, ectodactyly, and microdactyly.

Table A-37

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT†

Rabbit: Hematologic Evaluation (Packed Cell Volume %)

<u>Animal Number</u>	<u>Week of Study</u>		
	<u>-2</u>	<u>9</u>	<u>13</u>
<u>Control</u>			
180	46.0	41.5	35.5
909	48.0	48.0	40.0
916	43.0	43.0	39.0
Mean±S.D.	46±2	44±3	38±2
<u>0.1 ppm</u>			
917	43.0	39.0	40.0
920	42.0	37.0	37.5
906	44.0	44.0	52.5
915	42.0	33.0	29.0
Mean±S.D.	43±1	38±5	40±10
<u>1.0 ppm</u>			
931	41.0	38.0	36.0
919	40.5	39.0	42.0
904	45.0	30.0	29.0
930	43.5	40.5	41.0
Mean±S.D.	42±2	37±5	37±6
<u>10.0 ppm</u>			
914	43.5	40.0 ^a	
908	45.0	Died	
927	42.0	Died	
924	44.0	43.0	43.5
Mean±S.D.	44±1	43	44

†Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

^aAfter 8 weeks of exposure hematological evaluation done on animal #914 prior to sacrificing. Not included in calculations.

Table A-38

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Hematologic Evaluation (R.B.C. x 10⁶)

<u>Animal Number</u>	<u>Week of Study</u>		
	<u>-2</u>	<u>9</u>	<u>13</u>
<u>Control</u>			
180	6.67	6.21	5.42
909	7.63	7.23	6.34
916	6.01	6.21	5.83
Mean±S.D.	6.8±0.8	6.6±0.6	5.9±0.5
<u>0.1 ppm</u>			
917	6.55	6.15	6.26
920	5.82	5.29	5.35
906	7.00	6.26	7.79
915	6.26	4.55	3.88
Mean±S.D.	6.4±0.5	5.6±0.8	5.8±1.6
<u>1.0 ppm</u>			
931	5.64	5.60	5.71
919	5.74	5.34	5.59
904	6.78	5.29	5.76
930	6.44	6.26	6.22
Mean±S.D.	6.2±0.6	5.6±0.4	5.8±0.3
<u>10.0 ppm</u>			
914	6.21	6.23 ^a	
908	6.63	Died	
927	6.40	Died	
924	6.59	5.83	6.06
Mean±S.D.	6.5±0.2	5.8	6.1

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aAfter 8 weeks of exposures, hematological evaluation was done on animal #914 prior to sacrificing. Not included in calculations.

Table A-39

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Hematologic Evaluation (Hemoglobin g/100ml)

<u>Animal Number</u>	<u>Week of Study</u>		
	<u>-2</u>	<u>9</u>	<u>13</u>
<u>Control</u>			
180	15.0	13.9	11.6
909	15.2	14.7	13.9
916	13.8	14.0	13.1
Mean±S.D.	14.7±0.8	14.2±0.4	12.9±1.2
<u>0.1 ppm</u>			
917	13.8	12.7	13.1
920	13.6	12.4	12.8
906	14.4	12.4	16.1
915	14.3	10.8	8.9
Mean±S.D.	14.0±0.4	12.1±0.9	12.7±3.0
<u>1.0 ppm</u>			
931	12.9	12.3	12.0
919	13.7	12.7	13.9
904	14.8	9.5	9.0
930	14.2	13.3	13.4
Mean±S.D.	13.9±0.8	11.9±1.7	12.1±2.2
<u>10.0 ppm</u>			
914	13.9	12.4 ^a	
908	14.3	Died	
927	14.0	Died	
924	15.2	14.4	14.6
Mean±S.D.	14.4±0.6	14.4	14.6

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aAfter 8 weeks of exposures, hematological evaluation was done on animal #914 prior to sacrificing. Not included in calculations.

Table A-40

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Hematologic Evaluation (W.B.C. x 10³)

<u>Animal Number</u>	<u>Week of Study</u>		
	<u>-2</u>	<u>9</u>	<u>13</u>
<u>Control</u>			
180	11.6	9.9	12.3
909	7.7	11.9	13.2
916	8.8	10.6	10.1
Mean±S.D.	9.4±2.0	10.8±1.0	11.9±1.6
<u>0.1 ppm</u>			
917	9.8	13.2	8.7
920	7.1	8.3	7.1
906	13.2	25.3	17.8
915	9.4	16.4	18.0
Mean±S.D.	9.9±2.5	15.8±7.2	12.9±5.8
<u>1.0 ppm</u>			
931	8.7	10.2	11.3
919	8.4	9.5	8.5
904	7.2	13.9	13.1
930	9.1	15.1	9.9
Mean±S.D.	8.4±0.8	12.2±2.7	10.7±2.0
<u>10.0 ppm</u>			
914	10.2	12.2 ^a	
908	11.6	Died	
927	9.2	Died	
924	7.0	7.7	6.6
Mean±S.D.	9.5±1.9	7.7	6.6

[†]Male rabbits were exposed to 0, 0.1 or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^aAfter 8 weeks of exposures, hematological evaluation was done on animal #914 prior to sacrificing. Not included in calculations.

Table A-41

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Hematologic Evaluation (Differential W.B.C. %)

Animal Number	Week of Study														
	-2					9					13				
Control	Neut.	Lym.	Mon.	EOS.	BAS.	Neut.	Lym.	Mon.	EOS.	BAS.	Neut.	Lym.	Mon.	EOS.	BAS.
180	28	68	3	0	1	36	60	2	0	2	62	28	9	0	1
909	32	53	10	1	4	49	38	6	2	5	42	50	4	2	2
916	31	62	2	2	3	37	60	1	0	2	43	50	1	1	5
Mean	30	61	5	1	3	41	52	3	1	3	49	43	5	1	3
<u>0.1 ppm</u>															
917	41	53	0	2	4	51	44	2	1	2	39	57	1	0	3
920	31	65	0	2	2	34	55	3	5	3	34	61	1	2	2
906	34	58	5	0	3	62	26	6	0	6	84	8	4	0	4
915	52	47	1	0	0	55	35	7	1	1	77	18	4	1	0
Mean	40	56	2	1	2	51	40	4	2	3	59	36	2	1	2
<u>1.0 ppm</u>															
931	32	64	2	1	1	53	32	7	0	8	57	34	4	0	5
919	27	68	1	0	4	39	56	2	0	3	28	63	1	1	7
904	10	83	4	1	2	59	27	11	1	2	74	19	6	0	1
930	27	60	9	1	3	69	20	5	0	6	45	46	3	2	4
Mean	24	69	4	1	2	55	34	6	0	5	51	41	3	1	4
<u>10.0 ppm</u>															
914	30	64	3	2	1	66a	25a	6a	1a	2a					
908	15	78	4	2	1	Died									
927	37	57	4	0	2	Died									
924	24	65	3	5	3	43	50	3	0	4	35	53	1	2	9
Mean	26	66	4	2	2	43	50	3	0	4	35	53	1	2	9

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

^aAfter 8 weeks of exposures, hematological evaluation was done on animal #914 prior to sacrificing. Not included in calculations.

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Table A-42

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Clinical Chemistry Values

Week of Study: 14

<u>Animal Number</u>	<u>Prothrombin Time Sec.</u>	<u>BUN mg/100 ml</u>	<u>SGPT mU/ml</u>	<u>SGOT mU/ml</u>	<u>AP mU/ml</u>
<u>Control</u>					
909	8.6	19	28	71	46
916	7.8	21	16	30	18
180	8.6	18	16	43	16
Mean±S.D.	8.3±0.5	19±2	20±7	48±21	27±17
<u>0.1 ppm</u>					
917	8.1	20	19	21	18
920	— ^a	16	23	36	22
906	8.3	60	18	24	11
915	7.8	13	10	20	9
Mean±S.D.	8.1±0.5	27±22	18±5	25±7	15±6
<u>1.0 ppm</u>					
919	7.6	22	27	61	30
904	8.0	16	22	24	26
931	— ^a	16	13	34	28
930	8.6	18	22	43	31
Mean±S.D.	8.1±0.2	18±3	21±6	40±16	29±2

[†]Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm DBCP were exposed for 8 weeks. Following termination of the exposure period animals were maintained in the laboratory for recovery.

^aNo sample taken.

Table A-44 (Continued)

DBCP: INHALATION FERTILITY STUDY IN THE MALE RABBIT[†]

Rabbit: Individual Organ Weights and Organ/Body Weight Ratios Determined at the Terminal (46 weeks) Sacrifice

Pathology Number	Animal Number	Final Body Weight (kg) ^a	Organ Weights (g and g/100g Body Weight)													
			BRAIN		HEART		LIVER		KIDNEYS		TESTES		EPIDIDYIMIDES		ADRENALS	
			g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g	g	g/100g
<u>Control</u>																
78-1732	844	4.30	10.01	0.23	6.85	0.16	86.50	2.01	17.30	0.40	5.83	0.14	2.22	0.05	0.32	0.01
1733	910	4.20	9.70	0.23	7.49	0.18	76.22	1.81	17.45	0.42	6.40	0.15	2.80	0.07	0.61	0.01
1734	901	4.46	9.75	0.22	7.50	0.17	74.13	1.66	15.85	0.36	6.65	0.15	2.21	0.05	0.69	0.02
1735	932	4.12	10.50	0.25	8.51	0.21	72.55	1.76	17.10	0.42	6.55	0.16	2.25	0.05	0.64	0.02
1736	907	3.81	10.05	0.26	7.00	0.18	55.97	1.47	14.05	0.37	5.51	0.14	1.90	0.05	0.54	0.01
1737	923	3.14	9.82	0.31	7.98	0.25	76.51	2.44	20.87	0.66	5.43	0.17	2.30	0.07	0.81	0.03
	MEAN	4.00	9.97	0.25	7.56	0.19	73.65	1.86	17.10	0.44	6.06	0.15	2.28	0.06	0.60	0.02
	±S.D.	±0.48	±0.29	±0.03	±0.62	±0.03	±9.94	±0.33	±2.25	±0.11	±0.54	±0.01	±0.29	±0.01	±0.16	±0.01
<u>0.1 ppm</u>																
1738	913	3.80	9.96	0.26	6.98	0.18	79.08	2.08	12.91	0.34	6.30	0.17	2.12	0.06	0.70	0.02
1739	928	4.56	10.80	0.24	8.12	0.18	76.10	1.67	18.29	0.40	6.49	0.14	2.70	0.06	0.91	0.02
1740	912	4.05	10.96	0.27	6.98	0.17	61.51	1.52	17.11	0.42	6.00	0.15	2.09	0.05	0.51	0.01
1741	902	4.75	9.49	0.20	6.42	0.14	72.88	1.53	18.58	0.39	6.25	0.13	2.39	0.05	0.49	0.01
1742	1128	4.78	11.51	0.24	8.40	0.18	72.68	1.52	17.52	0.37	7.23	0.15	2.60	0.05	0.68	0.01
1743	911	3.96	10.00	0.25	6.55	0.17	85.98	2.17	17.73	0.45	6.69	0.17	2.10	0.05	0.91	0.02
	MEAN	4.32	10.45	0.24	7.24	0.17	74.71	1.75	17.02	0.39	6.49	0.15	2.33	0.05	0.70	0.02
	±S.D.	±0.43	±0.76	±0.02	±0.83	±0.02	±8.12	±0.30	±2.08	±0.04	±0.43	±0.01	±0.27	±0.00	±0.18	±0.00
<u>1.0 ppm</u>																
1748	929	2.59	9.01	0.35	6.18	0.24	62.83	2.43	15.75	0.61	3.61	0.14	1.55	0.06	0.63	0.02
1744	926	2.71	9.39	0.35	9.45	0.35	49.88	1.84	17.82	0.66	5.21	0.19	2.20	0.08	0.68	0.03
1745	932A	4.78	9.10	0.19	6.91	0.14	71.31	1.49	16.37	0.34	6.39	0.13	2.21	0.05	0.66	0.01
1746	949	4.27	10.19	0.24	8.27	0.19	78.75	1.84	19.48	0.46	5.51	0.13	3.21	0.08	0.81	0.02
1747	178	4.60	9.81	0.21	7.01	0.15	75.98	1.65	17.00	0.37	3.85	0.08	3.09	0.07	0.75	0.02
	MEAN	3.79	9.50	0.27	7.56	0.22	67.75	1.85	17.28	0.49	4.91	0.14	2.45	0.07	0.71	0.02
	±S.D.	±1.06	±0.50	±0.07	±1.29	±0.08	±11.67	±0.35	±1.45	±0.14	±1.17	±0.04	±0.69	±0.01	±0.07	±0.00
<u>10.0 ppm</u>																
1749	921	4.82	9.78	0.20	8.42	0.17	79.08	1.64	19.18	0.40	2.10	0.04	1.90	0.04	0.50	0.01
1750	925	4.21	10.58	0.25	6.78	0.16	77.56	1.84	18.24	0.43	1.89	0.04	1.60	0.04	0.87	0.02
1751	924	4.23	10.80	0.26	7.32	0.17	69.33	1.64	25.42 ^c	0.60 ^c	1.42	0.03	1.65	0.04	0.54	0.01
1752	933	4.10	10.40	0.25	7.13	0.17	70.85	1.73	17.95	0.44	1.39	0.03	1.59	0.04	0.59	0.01
1753	1125	3.19	9.60	0.30	5.62	0.18	53.53	1.68	17.48	0.55	2.22	0.07	1.60	0.05	0.65	0.02
	MEAN	4.11	10.23	0.25	7.05	0.17	70.07	1.71	18.21	0.45	1.80	0.05	1.67	0.04	0.63	0.02
	±S.D.	±0.59	±0.52	±0.03	±1.01	±0.01	±10.15	±0.08	±0.72	±0.07	±0.38	±0.01	±0.13	±0.01	±0.15	±0.00

[†] Male rabbits were exposed to 0, 0.1, or 1.0 ppm of DBCP by inhalation for 6 hr/day, 5 days/week for 14 weeks. Male rabbits exposed to 10 ppm of DBCP were exposed for 8 weeks. Following termination of the exposure period, animals were maintained in the laboratory for recovery.

^a Values represent fasted body weights taken prior to necropsy.

^b Mean excludes animal #916 because one testis was severely atrophic.

^c Organ weights not used in calculations.