AR201-13144B2

PHYSICAL AND CHEMICAL DATA

1. **MELTING POINT**

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol, 99.5% purity
Method:	OECD 102
GLP:	Yes
Year:	2000
Results:	< 0 °C
Data Quality:	Code 1d
References:	FMC Corporation, Princeton, NJ

2. **BOILING POINT**

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol, 99.5% purity
Method:	OECD 103
GLP:	Yes
Year:	2000
Results:	76 °C @ 1 mm Hg Vacuum distillation
Data Quality:	Code la
References:	FMC Corporation, Princeton, NJ

3. **VAPOR PRESSURE**

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol, 99.5% purity
Method:	OECD 104
GLP:	Yes
Year:	2000
Results:	27.2 Pascals @ 20 °C Static method. Extrapolated from higher temperature.
Data Quality:	Code la
References:	FMC Corporation, Princeton, NJ

4. **PARTITION COEFFICIENT**

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol, 99.5% purity
Method:	OECD 107
Temperature:	23 °C
GLP:	Yes
Year:	2000
Results:	134 Flask-shaking method
Data Quality:	Code la
References:	FMC Corporation, Princeton, NJ

5. WATER SOLUBILITY

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol, 99.5% purity
Method:	OECD 105
Temperature:	**25** °C
GLP:	**Yes**
Year:	**2000**
Results:	**7.9** g/L
Data Quality:	Code la
References:	FMC Corporation, Princeton, NJ

ENVIRONMENTAL FATE AND PATHWAY

6. PHOTODEGRADATION

No available studies were found.

7. STABILITY IN WATER (HYDROLYSIS)

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	OECD guideline 111
GLP:	Yes
Year:	**2000**

Results: 7-phenol was tested at a concentration of 100 ppm at pH 4, 7 and 9 at 50°C for 5 days in the dark. Samples were analyzed by HPLC in triplicate at 0 and 5 days. The compound was stable at pH 4 and 7. For pH 9, the compound was further tested at 20 and 37°C for 35 days, sampling at 6 timepoints between 0 and 35 days. A concurrent test was run at pH 1.2 at 37°C with the same sampling points. See table below for results at pH 1.2 and 9.

pH	Temperature	Half-life
1.2	37°C	301 days
9	20°C	277 days
9	37°C	74 days

Data Quality: Code la

References: McKemie, T., "Hydrolysis of 7-Phenol at pH 4, 7 and 9," Unpublished study for FMC Corporation, Agricultural Products Group, Princeton, NJ, 2000.

8. **TRANSPORT/DISTRIBUTION (FUGACITY MODEL)**

No available studies were found.

9. **BIODEGRADATION**

No available studies were found.

ECOTOXICOLOGY

10. ACUTE TOXICITY TO FISH

Test Substance: 2,3-dihydro-2,2-dimethyl-7-benzofuranol

Method: U.S. EPA FIFRA 72-l (c)

Species: Rainbow trout, Oncorhynchus mykiss

Test Concentration (actual): 2.9, 7.0, 13, 21, 33, and 50 mg/L

Exposure Period: 96 hours

Analytical Monitoring: Yes

GLP: Yes

Year: 1998

Results:

96 hour LC50 = 37 mg/L
NOEC = 7.0 mg/L

The acute toxicity of 2,3-dihydro-2,2-dimethyl-7-benzofuranol ("7-hydroxy") to the rainbow trout, Oncorhynchus mykiss was conducted for 96 hours from August 20 to 24, 1998 at T.R. Laboratories, Inc., in Marblehead, Massachusetts.

The test was performed under static conditions at 12 ± 1°C with 5 concentrations of test substance and a dilution water control
The dilution water was deionized water collected at Marblehead, Massachusetts and adjusted to a hardness of 40 to 48 mg/L as $CaCO_3$. Nominal concentrations of 7-hydroxy were 0 mg/L (control), 7.8 13, 22, 36 and 60 mg/L. Mean measured concentrations of 7-hydroxy were ND (none detected at or above the quantitation limit of 2.9 mg/L; control), 7.0, 13, 21, 33 and 50 mg/L. Mean measured concentrations were 83 to 100% of nominal values and were stable during the 96-hour test. Mean measured concentrations were used for all calculations.

Organisms used in the test were obtained from a commercial supplier and acclimated to test conditions for more that 14 days at the contract laboratory. Ten rainbow trout were indiscriminately distributed to each of two replicates of each treatment. The test was performed in 20-liter glass aquaria that contained 16 liters of test solution. Test vessels were randomly arranged in a water bath during the test. A 16-hour light and 8 hour dark photoperiod was automatically maintained with cool-white fluorescent lights that provided a light intensity of approximately 97 foot candles. After 96 hours of exposure, the control organisms had a mean wet weight (blotted dry) of 0.27 g and a mean total length of 3 1 mm. All animals were in good condition at the beginning of the study

Data Quality:

Code 1

References:

T.R. Wilbury Laboratories, Inc. Acute Toxicity of 7-Hydroxy to the Rainbow trout, Oncorhynchus mykiss. T.R. Wilbury Study Number 1583-FM. FMC Study Number A98-48 12. (1998)

11. TOXICITY TO AQUATIC PLANTS

Test Substance:

2,3-dihydro-2,2-dimethyl-7-benzofuranol

Method:

U.S. EPA FIFRA Subdivision J, 123-2

Species:

Selenastrum capricornutum

Exposure Period:	120 hour
GLP:	Yes

Year: 1998

Results:

Endpoint	Calculated Using Cell Density	Calculated Using Average Specific Growth Rate	
72 hour EC50	44 mg/L	>99 mg/L	
96 hour EC50	50 mg/L	>99 mg/L	
120 hour EC50	72 mg/L	>99 mg/L	
NOEC	50 mg/L	50 mg/L	

Remarks:

The toxicity of 2,3-dihydro-2,2-dimethyl-7-benzofuranol ("7-hydroxy") to the freshwater alga, Selenastrum capricomutum, was investigated. The test, which was designed to establish the 24, 48, 72, 96 and 120 hour EC25 and EC50 values and the 120 hour no observed effect concentration (NOEC), was conducted from August 28 to September 2, 1998 for FMC Corporation by T.R. Wilbury Laboratories, Inc.

The test was conducted under static conditions with five concentrations of test substance and a dilution water control at 25 + 2°C.

The dilution water was sterile enriched medium, adjusted to a pH of 7.5 ± 0.2 with hydrochloric acid

The number of cells/mL was determined microscopically using a haemocytometer every 24 hours during the exposure. Nominal concentrations of 7-hydroxy were 0 mg/L (control, 6.4, 13, 26 52 and 100 mg/L. Mean measured concentrations were <2.9 mg/L 9control), 6.2, 13, 25, 50 and 99 mg/L, which were 96% to 100% of nominal concentrations and were stable throughout the test. Mean measured concentrations were used for all calculations.

Algae were distributed among four replicates of each treatment at the rate of approximately 3000 cells/mL. The fourth replicate was established for the purpose of obtaining a 72 hour pH measurement (pH in this replicate was also recorded at 120 hours). Test vessels were 250 mL glass Erlenmeyer flasks that contained 50 mL of test solution with an approximate depth of 1.5 cm. Test vessels were randomly arranged on a rotary shaker that was adjusted to 100 rpm and located in an incubator during the test. A 24 hour light 0 hour dark photoperiod was automatically maintained with cool-

white fluorescent lights that provided a light intensity of 4,000 to 4,400 lux.

No insoluble material was observed during the test.

Data Quality: Code 1

References: T.R. Wilbury Laboratories, Inc. Growth and Reproduction Toxicity Test with 7-Hydroxy and the Freshwater Alga, Selenastrum capricomutum. T.R. Wilbury Study Number 1585-FM. FMC Study Number A98-4813. (1998)

12. ACUTE TOXICITY TO AQUATIC INVERTEBRATES

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	U.S.EPA FIFRA 72-2
Species:	Daphnia magna
Exposure Period:	48 hours
Analytical Monitoring:	Yes
GLP:	**Yes**
Year:	1998
Results:	LC50 = 40 mg/L EC50 = 33 mg/L NOEC = 13 mg/L

The acute toxicity of 2,3-dihydro-2,2-dimethyl-7-benzofuranol (" 7-hydroxy") to the daphnid, Daphnia magna, was conducted for FMC Corporation for 48 hours from September 1 to 3, 1998 at T.R. Wilbury Laboratories, Inc., in Marblehead, Massachusetts.

The test was performed under static conditions at 20 ± 1 °C with five concentrations of test substance and a dilution water control. The dilution water was deionized water collected at Marblehead, Massachusetts and adjusted to a hardness of 160 to 180 mg/L as $CaCO_3$. Nominal concentrations of 7-hydroxy were 0 mg/L (control), 13, 22, 36, 59, and 100 mg/L. Mean measured concentrations of 7-hydroxy were ND (none detected at or above the quantitation of 2.9 mg/L; control), 13, 21, 35, 57 and 97 mg/L that were 95 to 100% of nominal and were stable throughout the test.

Organisms used the test were obtained from an in-house culture that was acclimated to test conditions for more than seven days at the contract laboratory. Ten daphnids were indiscriminately distributed to each of two replicates of each treatment. The test was performed in 300 ml glass beakers that contained 2.50 ml of test solution. A 16 hour light and 8 hour dark photoperiod was automatically maintained with cool-white fluorescent lights that provide a light intensity of approximately 50 foot candles. After 48 hours of exposure the control organisms had an average wet weight (blotted dry) of 0.14 mg. All animals were in good condition at the beginning of the study. One hundred percent survival occurred in the control and no sub lethal effects were noted in the control during the exposure period.

Data Quality:	Code 1
References:	T.R Wilbury Laboratories. Inc. Acute Toxicity of 7-Hydroxy to the Daphnid, Daphnia magna. T.R. Wilbury Study Number 1584-FM. FMC Study Number A98-4811. (1998)

TOXICITY

13. ACUTE TOXICITY

A. ORAL

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	An oral LD50 was conducted with test material administered undiluted by gavage in accordance with EPA Guideline 8 1- 1. Groups of animals (1 O/sex/group) were administered a single treatment via gavage to various doses of test material. Observations for toxicity and mortality were conducted at 0.5, 1, 2, 3, 4 and 6 hours on the day of dosing and twice daily for 13 days. On day 14 the animals were observed once. Body weights were recorded on days 0, 7 and 14 of study.
Species/strain:	Sprague-Dawley rats
Sex:	Both
No. Animals/Group:	10/sex/group
Post dosing observation period:	14 days
GLP:	**Yes**
Year:	1984
Results:	Oral LD50 in males is 2450 mg/kg (2137-2764, 95% confidence limits) and oral LD50 in females is 1743 mg/kg (1362-2124 mgikg, 95% confidence limits). Practically non-toxic orally. Doses of 3000, 2300 and 1800 mgikg were run in males with mortality of 80%, 40% and 10%, respectively, and doses of 2300, 1800, 1400 and 1000 mgikg were run in females with mortality of 70%, 50%, 40% and 10%, respectively.
Data Quality:	Code 1
References:	Acute Oral Toxicity of FMC 10272 in Rats. FMC Toxicology Laboratory, FMC Study A83-1133, March 12, 1984. U.S. Environmental Protection Agency Pesticide Assessment Guidelines; Subdivision F, Hazard Evaluation: Human and Domestic Animals, 8 l-l Acute Oral Toxicity Study.

B. DERMAL

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol

Method:	Preliminary dermal toxicity and irritation screen. Groups of five male rabbits were exposed to test material in contact with intact skin for 24 hours under an occlusive wrap. Observations for toxicity and mortality were made every three hours on the day of dosing and once/day thereafter for 14 days. Skin irritation was scored using the Draize method at 24, 48, and 72 hours after application and on days 4, 7, and 14 of study.
Species/strain:	New Zealand White rabbits
No. Animals:	5 males/dose
Dose:	20 mg/kg and 300 mg/kg
Vehicle:	Undiluted
Exposure Period:	24 hours
Post-exposure observations:	14 days
GLP:	**Yes**
Year:	1985
Results:	Non-irritating at 20 mg/kg and minimally irritating at 300 mg/kg. No irritation was observed on rabbits receiving 20 mgikg until day 7. Two rabbits had slight erythema. All irritation resolved by day 14. Rabbits treated with 300 mg/kg had no irritation at 24 and 48 hours. At the 72-hour scoring and on day 4, one rabbit **had** slight erythema. On day 7 one rabbit had eschar and one rabbit had slight erythema and desquamation. A third rabbit had desquamation. Dermal LD50 is greater than 300 mg/kg (no deaths occurred in the study). Practically non-toxic dermally.
Data Quality:	Code 2
References:	Preliminary Dermal Toxicity/Irritation of FMC 10272 Technical in Rabbits, FMC Toxicology Laboratory, FMC Study A84-1534, July 3, 1985.

C. INHALATION

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	Animals (5/sex/group) were exposed in a dynamically-operated whole-body inhalation chamber for six hours to a nominal vapor concentration of 0.03 mg/L or 4.5 ppm test material (measured with a Bendix THC Analyzer). The test atmosphere was generated by passing air over a reservoir of test material. Observations for mortality and toxicity were performed frequently during exposure and twice daily for 13 days and once on day 14. Body weights were recorded individually on day 0, 7 and 14. A control group of rats was sham-exposed to room air only.
Species/strain:	Sprague-Dawley rats

No. Animals:	5 male and 5 females
Dose:	0.03 mg/L or 4.5 ppm (nominal) or 18 ppm (analytical)
Vehicle:	undiluted
Exposure Period:	6 hours
Post-exposure observations:	14 days
GLP:	Yes
Year:	**1987**
Results:	There were no deaths or changes in body weight due to treatment during the study. The only clinical sign noted was red periocular fur in one male upon removal from the chamber and at the one-hour post-exposure observation. All other animals remained healthy during the study. The 6 hour LC50> 18 ppm
Data Quality:	Code 1
References:	Acute Inhalation Toxicity Screen of FMC 10272 in Rats, FMC Toxicology Laboratory, FMC Study A85- 1662, March 24, 1987.

14. GENETIC TOXICITY IN VIVO

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	Drosophila sex-linked recessive lethal assay: Adult males (8 to 30 hours old and previously starved for 4 hours) were treated in groups of 15 in vials plugged with cotton. The base of each vial was covered with a disc of filter material impregnated with 450 ul of sucrose feeding solution, with or without test material. Untreated controls received the untreated sucrose feed stock. The male flies were transferred to fresh treatment vials daily for 3 days. At the end of each 24-hour exposure period, the number of dead flies were counted. A positive control group was treated with 25 ppm dimethylnitrosamine for 24 hours. Following the exposure period, males were mated at age 3-4 days. Treated and control P1 Canton S wild-type males were mated singly to 3 virgin Baac females (age 3 to 10 days). Each male was transferred after 3 days to 3 new virgin females. The fertilized females of brood 1 were kept in culture vials for 4 more days the discarded. This transfer process was repeated twice more, but the time that the males in broods 2 and 3 was two days each.

Method (continued):	The males were then discarded. The F 1 females (heterozygous for the treated X and the balancer X) were mated individually to brothers. An effort was made to mate 33 females from each P1 male brood to insure that a total of 99 chromosomes were tested from each treated male. Due to post-mating mortality and sterility, this number was sometimes less than 99 per male. The F2 generation cultures were observed when fully hatched for the presence (non-lethal) or absence (lethal) of wild type males. Suspected lethal cases were retested by re-mating with heterozygous females and observing the F3 offspring.
Species/strain:	Drosophila melanogaster
Sex:	Baac females and Canton-S wild-type males
Route of Administration:	Via feeding in 5% buffered sucrose solution
Exposure Period:	Three days
Doses:	A range-finding study was conducted to determine doses for the definitive study. Doses of 200,250, 300, 350, 400, 450, 500 and 1000 ppm were employed in the definitive study.
Vehicle:	A stock solution was prepared by mixing 60 ul of test material to 4950 ul of 95% ethanol. Aliquots of the stock solution were mixed with the sucrose feeding solution to prepare a series of concentrations of test material in 10% ethanol. The negative control group was fed 5% buffered sucrose in 10% ethanol.
GLP:	*Yes*
Year:	1983
Results:	Negative. Test material does not induce sex-linked recessive lethal mutations *in vivo* in Drosophila.
Data Quality:	Code 2
References:	Drosophila Sex-Linked Recessive Lethal Assay of 2, 2-dimethyl-2,3-dihydro-7-hydroxybenzofuran ("7-hydroxy", T2049), University of Wisconsin, Zoology Department and Microbiological Associates, FMC Study A83-1020, November 7, 1983. Margolin, B.H., Collings, B. J. and Mason, J. M. Statistical analysis and sample size determinations for mutagenicity experiments with binomial responses. Environ. Mut. 5, 705-716 (1983).

15. **GENETIC TOXICITY IN VITRO**

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	L5 178Y TK+/- Mouse Lymphoma Mutagenicity Assay. Duplicate assays were performed. L5 178Y cells were grown in culture. Cell suspensions containing one million cells per ml. Test material was prepared in DMSO and diluted to concentrations ranging from 0.001 to 100 ul/ml. Test material, cell suspension, S9 mixture or culture media (non-activated assay) were added to each tube. Tubes were gassed with air and 5% carbon dioxide for four hours. After the four-hour exposure period, the cells were centrifuged, washed twice and evaluated for toxicity be comparing cell population growth at each dose level to that of solvent control cultures. For the mutation assay, appropriate concentrations of test article with or without S9 were added to cell suspensions to give final cell concentrations of 600,000 cells/ml. Solvent controls were used as negative controls. Positive control cultures included the edition of Ethyl Methanesulfonate (1 .O and 0.5 ul/ml) and 7, 12-Dimethylbenz(a)anthracene (7.5 and 5.0 ug/ml). All tubes were gassed and incubated for four hours at 37 degrees Centigrade under amber lighting. Following exposure, the cells were washed and removed by centrifuge and incubated for two days with cell population adjusted daily to 300,000 cells/ml. Following this expression period, cells were placed in cloning medium with 0.34% Noble agar and TFT (3 ug/ml final concentration) as a restrictive agent. For each pair of duplicate culture flasks one was used for viable count and one for labeling with TFT. Three plates each for the viable count and the labeling of cultures were incubated in petri plates. Petri plates were placed in cold storage for 20 minutes to allow gelling, the removed and incubated at 37 degrees Centigrade for 10-12 days. After the incubation period, the plates were scored for total number of colonies per plate. Mutation frequency was determined by dividing the average number of colonies in the three TFT plates by the average number of colonies in the three corresponding viability count plates and multiplying by two.
System of Testing:	Cultured L5 178Y mouse lymphoma cells
Concentrations:	S-9 activated test cultures were dosed at 0.010, 0.0075, 0.0056, 0.0042, 0.0032, 0.0024, 0.0018 and 0.0013 ul/ml. Non-activated test cultures were dosed at 0.24, 0.18, 0.13, 0.10, 0.075, 0.056, 0.042, 0.032, 0.024 and 0.018 ul/ml.
Metabolic Activation:	Yes, S-9 rat liver microsomes
GLP:	No, but there were quality assurance audits
Year:	1983

Results:	Positive in the presence and absence of metabolic activation by S-9. Non-activated cultures cloned (top four doses) exhibited mean mutant frequencies of from 4.1 to 3.0 times the solvent control mutant frequencies. Total Growth for these cultures ranged from 6% to 25%. None of the other, lower doses in the non-activated assay had elevated mutant frequencies relative to the solvent control. The total growth of these doses ranged from 54-125%. Two activated cultures that were cloned (0.010 and 0.0075 ul/ml doses) exhibited mutant frequencies where were 3.3 and 2.1 times the mutant frequency of the solvent controls, respectively. The Total Growth of these cultures was 20% and 16%, respectively. None of the lower doses in the activated assay exhibited elevated mutant frequencies relative to the solvent controls. The total growth of these closes ranged from 44- 100%. Appropriate positive and negative controls were included and showed the appropriate responses.
Data Quality:	Code 2
References:	L5 178Y TK+/- Mouse Lymphoma Mutagenesis Assay, Microbiological Associates, FMC Study A83-961, September 13, 1983. Clive, D. and Spector, J.F.S. Laboratory procedure for assessing specific locus mutations at the TK locus in cultured L5 178Y Mouse Lymphoma cells. Mutation Research 31, 17-29 (1975).

16. **GENETIC TOXICITY IN VITRO**

Test Substance:	2,3-dihydro-2,2-dimethyl-7-benzofuranol
Method:	*Salmonella typhimurium*/Mammalian Microsome Plate Incorporation Assay (Ames Test). Nine separate, GLP studies with nice separate lots of the test material were conducted using *Salmonella typhimurium* tester strains TA1535, TA1537, TA1538, TA98, TA100 with and without metabolic activation by rat liver microsomes, S9, using the standard protocol. Appropriate positive and negative controls were included in all assays.
Type:	In vitro mutagenicity in bacteria
System of Testing:	*Salmonella typhimurium* TA1535, TA1537, TA1538, TA98, TA 100 with and without metabolic activation by rat liver microsomes, S9
Concentration:	61 to 10,000 ug/plate
Metabolic Activation:	s9
GLP:	**Yes**
Year:	1983-1984

Results: Positive: The same result was confirmed in all of the nine assays. The test material did not induce an increase in mutant frequency in tester strains TA1537, TA1538, TA98, or TA100 in the presence or in the absence of metabolic activation. The test material did induce a statistically significant positive or weakly positive response in tester strain TA 1535 without metabolic activation at nontoxic doses (6 l-5 56 ugiplate; 123-3333 ugiplate). Mutant frequency was approximately 2.5 – 3.0 times the solvent control in TA1535 without metabolic activation. Appropriate positive and negative controls were included in each assay and responded appropriately.

Data Quality: Code 1

References:

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-842, Hazleton Laboratories America, Inc., March 19, 1984

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-843, Hazleton Laboratories America, Inc., May 9, 1984.

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-911, Hazleton Laboratories America, Inc., December 5, 1983.

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-927, Microbiological Associates, October 13, 1983.

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-928, Microbiological Associates, September 28, 1983

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-930, Microbiological Associates, September 28, 1983.

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-936, Microbiological Associates, September 28, 1983.

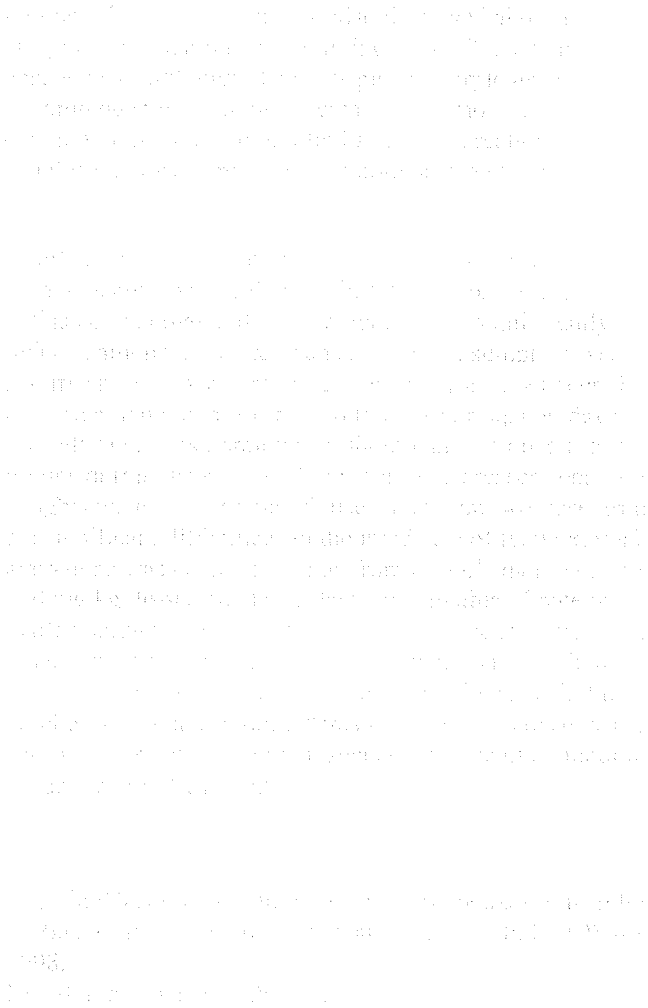
Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-937, Microbiological Associates, September 22, 1983.

Salmonella typhimurium/Mammalian Microsome Plate Incorporation Assay, FMC Study A83-942, Microbiological Associates, April 12, 1984-check date

Ames, B.N. McCann, M. and Yamasaki, E. Methods for Detecting Carcinogens and Mutagens with *the Salmonella* Mammalian-Microsome Mutagenicity Test, Mutation Res. 3 1, 347-364, 1975.

17. REPEATED DOSE TOXICITY

No studies were found.



CRITERIA FOR RELIABILITY CODES

(Adapted from Klimisch et al 1997)

Code of Reliability	Category or reliability
1	**Reliable without restriction**
1a	GLP guideline study (OECD, EC, EPA, FDA, etc.)
1b	Comparable to guideline study
1c	Test procedure in accordance with generally accepted scientific standards and described in sufficient detail
2	**Reliable with restrictions**
2a	Guideline study without detailed documentation
2b	Guideline study with acceptable restrictions
2c	Comparable to guideline study with acceptable restrictions
2d	Test procedure in accordance with national standard methods with acceptable restrictions
2e	Study well documented, meets generally accepted scientific principles, acceptable for assessment
2f	Accepted calculation method
2g	Data from handbook or collection of data
3	**Not reliable**
3a	Documentation insufficient for assessment
3b	Significant methodological deficiencies
3c	Unsuitable test system
4	**Not assignable**
4a	Abstract
4b	Secondary literature
4c	Original reference not yet available
4d	Original reference not yet translated
4e	Documentation insufficient for assessment