Contains No CBI

MILES

8EHQ-0993-12438

Miles Inc.
Mobay Road
Pittsburgh, PA 15205-9741
Phone: 412 777-2000

September 14, 1993

Document Processing Center (TS-790)
Attention: Section 8(e) Coordinator
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Dear Sir:

Miles Inc. is submitting an acute dermal toxicity study and an acute oral toxicity study on (Phosphorodichloridothioic acid O-ethyl ester) (CAS# 1498-64-2). These studies were just received from our parent company, Bayer AG.

In the dermal tox study, groups of Wistar rats (5/sex/dose-level) were given a single dermal dose of the test material at doses ranging from 50 mg/kg to 1000 mg/kg body weight. The resultant LD50 values were estimated at 350 mg/kg body weight for the males and 336 mg/kg body weight for the females. The test material was an obvious irritant, as evidenced by the severe irritation produced at the application site. Additional signs include: Apathy, decreased motility, spastic gait, occasional trembling, spasms, decreased reflexes, dyspnea, piloerection and diarrhea. These signs began around 1-hour after dosing and lasted up to 10-days post-dosing in some animals.

In the oral tox study, groups of Wistar rats (5/sex/dose-level) were administered the test material as a single bolus by gavage at doses ranging from 100 to 2000 mg/kg body weight for males and from 100 to 1600 mg/kg body weight for females. The resultant LD50 values were estimated at 1524 mg/kg for the males and 1342 mg/kg for the females. Clinical signs of toxicity included the following: Apathy, decreased motility, spastic gait, trembling, spasms, dyspnea and piloerection. These signs lasted up to 9-10 days post-exposure in some animals.

We are submitting these studies since it appears that the regulations promulgated pursuant to TSCA Section 8(e) require these findings to be reportable information, and in light of the nature of the clinical signs observed in both and EPA's guidance on the reporting of "neurotoxic" findings in non-moribund animals in acute toxicity studies.

8EHQ-93-12438
INIT 09/20/93

88930000455

RECEIVED 10-8-93

46 pgs

This chemical has limited exposure potential in our experimental pesticide program. We will provide this information in our regular worker hazard communications literature and training programs.

The information in these studies is not considered confidential business information. If you have any questions, please contact me.

Sincerely,

Donald W Lamb

Donald W. Lamb, Ph.D
Vice President
Product Safety and Regulatory Affairs
(412-777-7431)

93-2-15.doc:vmk
Enclosure
Certified Mail: P 921 654 212

Contains No CBI

BAYER AG
TOXICOLOGY UNIT
Friedrich-Ebert-Straße 217-333
5600 Wuppertal 1

Report No. 22232

Date of Report 04.05.1993

93 SEP 20 AM 8:25

ETHYLOIL

(Precursor for the production of oftanol)

INVESTIGATIONS OF ACUTE ORAL TOXICITY IN RATS

by

Dr. J. Kolb

Study No.: T 4044105

Until they are published, the findings contained in this report may only be used with the approval of BAYER AG. Further reproduction of all or part of this report is not permissible.

This page is intentionally left blank for the purpose of submitting administrative information that is required by regulations promulgated by various countries.

GLP DECLARATION OF THE STUDY DIRECTOR

The investigations were essentially carried out in accordance with the OECD Principles of Good Laboratory Practice (GLP) dated 04.02.1983, published in the Federal Gazette No. 42a dated 02.03.1983 and the Federal Law Gazette, Part I dated 22.03.1990.

Deviating from this, no analytical confirmation of the stability of the test substance was carried out in the administered formulations.

Some animals were not randomly allocated to the study groups.

The validity and the assessment of the results is not impaired by the recorded deviation.

11.02.1993

Dr. J. Kolb
(Study director)

Date

TABLE OF CONTENTS

1. QUALITY ASSURANCE DECLARATION 6

2. SIGNATURES 7

3. SUMMARY 8

4. INTRODUCTION 9

5. STUDY IDENTIFICATION AND RESPONSIBILITIES 9

5.1. Study identification 9
5.2. Responsibilities 9

6. MATERIALS AND METHODS 10

6.1. Test substance 10
6.2. Test system 11
6.2.1. Choice of species 11
6.2.2. Acclimatisation 11
6.2.3. Physical condition 11
6.2.4. Age and body weight 11
6.3. Animal husbandry 11
6.3.1. Accommodation 11
6.3.2. Animal rooms 12
6.3.3. Cleaning, disinfection 12
6.3.4. Climatic conditions 12
6.3.5. Nutrition 12
6.4. Test methods 13
6.5. Methodology 13
6.5.1. Formulation of the test substance 13
6.5.2. Randomisation and identification of the test animals ... 13
6.5.3. Administration and dosage 13
6.5.4. Investigations 14
6.5.4.1. Clinical observation 14
6.5.4.2. Post-treatment observation 15
6.5.4.3 Body weights 15
6.5.4.4 Necropsy 15
6.5.5. LD50 calculation 15

7. RESULTS 16

7.1. Dose-response table (LD50) 16
7.2. Clinical findings 17
7.3. Body weights 17
7.4. Gross pathological findings 17

8. DISCUSSION AND ASSESSMENT 18

9. REFERENCES 19

10. LIST OF ABBREVIATIONS 20

11. APPENDIX 21

1. QUALITY ASSURANCE DECLARATION

Test substance: Ethyloil

Study No.: T 4044105

This study was checked by quality assurance on the dates shown below. The results of the checks and inspections were made known in writing to the study director and, if necessary, also to the Head of the Institute or other persons involved.

Date of the check/inspection	Date of transfer of the inspection report
27.10.1992 (study plan)	27.10.1992
10.11.1992	10.11.1992

The study results and the methods are reproduced correctly in this report.

Quality assurance
PH-AQ-S/GLP, Bayer AG

Date: 29.04.93

Responsible: _____
(Dr. H. Lehn)

2. SIGNATURES

Study Director:	(Dr. J. Kolb)	29.04.1993 (Date)
Group Manager:	(Dr. F. Krötlinger)	29.04.1993 (Date)

3. SUMMARY

Acute oral toxicity investigations were carried out in male and female rats with the test substance ethyloil.

The methodology of the investigations was applied in conformity with the OECD Guideline for Testing of Chemicals; Section 4: Health Effects No. 401, "Acute Oral Toxicity"; adopted: 24th February 1987 (1) and according to Pesticide Assessment Guidelines, Subdivision F, Hazard Evaluation: Human and Domestic Animals, Series 81-1 Acute Oral Toxicity Study (Revised Edition, November 1984) (2).

LD50 rat m:	1524 mg/kg b.w.
LD50 rat f:	1342 mg/kg b.w.

Deaths occurred in male animals within 3 days after a dose of 1400 mg/kg b.w. and at 1000 mg/kg b.w. and above in the female animals.

In both sexes, the clinical symptoms occurred after 11 m at the earliest after administration and lasted up to the 9th day or 10th day at the most (m, f). Apathy, decreased motility, spastic gait, trembling, spasms and prostration were determined as symptoms in different incidences and intensity. In addition, dyspnoea, polyuria, soft faeces, narrowed palpebral fissures and piloerection as well as pallor were observed. Occasionally, the cage litter was discoloured reddish-brown. This is mainly attributable to a discoloration of the urine.

On gross pathology, findings were detected in the lungs, liver, spleen, kidneys and in the gastro-intestinal tract. In particular, severe mucosal changes were observed in the stomach which are due to the known caustic effect of the test substance.

The dose of 100 mg/kg b.w. was tolerated by both sexes without symptoms.

The test substance ethyloil proved to have moderate to low toxicity after acute oral administration in male and female rats.

4. INTRODUCTION

Investigations of acute oral toxicity were carried out in rats with ethyloil.

These investigations were used in order to be able to carry out a product classification, as well as an estimation of the acute hazard potential when handling the test substance.

The investigations were carried out at the Institute of Toxicology, Agriculture, of the Toxicology Unit of BAYER AG, Wuppertal, Friedrich-Ebert-Straße 217-333. All study documents are archived at BAYER AG.

5. STUDY IDENTIFICATION AND RESPONSIBILITIES

5.1 Study identification

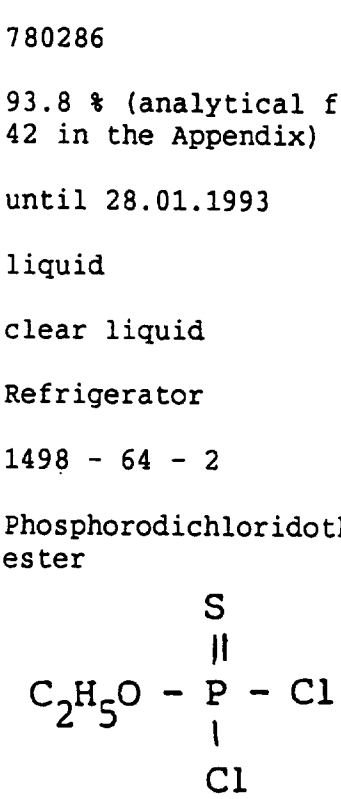
Study No.:	T4044105
Duration of the study:	20.10.1992 - 04.12.1992

5.2 Responsibilities

Head of Institute Toxicology, Agriculture:	Dr. L. Machemer
Group manager:	Dr. F. Krötlinger
Study director:	Dr. J. Kolb
Analysis:	Dr. H. Tengler
Quality assurance (Head):	Dr. H. Lehn
Archiving of the study data:	Dr. E.A. Löbbecke

6. MATERIALS AND METHODS

6.1. Test substance

Test substance designation:	Ethyloil (O-ethyl-thiophosphoric acid chloride) (precursor for the production of oftanol)
Manufacturer:	BAYER AG
Indication:	Insecticide/precursor
Batch No.:	Preparation 80327,10.6.92
Product No.:	780286
Content:	93.8 % (analytical finding see page 42 in the Appendix)
Release:	until 28.01.1993
Physical state :	liquid
Appearance:	clear liquid
Storage:	Refrigerator
CAS registration No.:	1498 - 64 - 2
Chemical designation (C.A.):	Phosphorodichloridothioic acid O-ethyl ester
Structural formula:	
Empirical formula:	C2H5OPSCl2
Molar mass:	179 g/mol

6.2. Test system

6.2.1. Choice of species

SPF-bred Wistar rats of the strain Bor: WISW (SPF Cpb) from breeder Winkelmann, Borchen, Paderborn were used. Animals of this strain have been used for years in toxicological studies at BAYER AG. Historical data on physiology and spontaneous changes are available. The physical condition of the breed is routinely examined for the most important specific infective agents on a random basis. The results of these investigations are archived at Bayer AG.

6.2.2. Acclimatisation

After delivery, the animals were adapted to the animal room environment for at least 7 days before the start of the treatment.

6.2.3. Physical condition

Only healthy, symptom-free animals were used for the study. Vaccination or treatment of the animals with anti-infectives took place neither before the delivery of the animals nor during the adaptation time or test period. The females were nulliparous and not pregnant.

6.2.4. Age and body weight

At the start of the study the male animals had an average initial weight of 176 g (169 to 192 g) and the female animals of 179 g (172 to 192 g), this corresponds to an age of approx. 8 (o) and 10 (o) weeks.

6.3. Animal husbandry

6.3.1. Accommodation

The animals were kept conventionally in Makrolon® type III cages (5 animals per cage) during the adaptation time and test period (6, 9). The cages were changed at least three times a week.

The low-dust wood granulate type S 8/15 was used (supplier: Ssniff, Spezialdiäten GmbH, Soest/Westfalen). Random samples of the wood granulate were examined for contaminants. The documents were archived. The analysis results did not give any indication that the study objective was being influenced.

6.3.2. Animal rooms

All animals in this study were kept in the same animal room. The treatment of the animals took place in a separate laboratory.

6.3.3. Cleaning, disinfection

The animal room was cleaned once a week and disinfected at least once a month with Zephirol® 10% (10 g benzalkonium chloride/100 g; application dilution 2%, i.e. 20 ml Zephirol® to 1 l water). Thereby, contamination of feed and contact with test animals were precluded. Pest control measures were not carried out in the animal rooms.

6.3.4. Climatic conditions in the animal room

Climate was set as follows:

Room temperature:	21° ± 1.5 °C (with external temperature over 22.5°C and rising)
Humidity (relative):	40-70 %
Light/darkness rhythm:	12-hour, artificial light
Air flow rate:	12 to 15 times per hour

Occasional deviations from these conditions occurred, e.g. due to cleaning of the animal room. They had no detectable effect on the test procedure.

6.3.5. Nutrition

Nutrition consisted of a fixed-formula standard diet "Altromin® 1324 - maintenance diet for rats and mice", the content of the components of which corresponds to "Altromin® 1320", (manufacturer: Altromin GmbH and Co. KG, Lage) and tap water (drinking bottles). Food (until approx. 17 hours before and from 2 hours after administration) and water were freely available for consumption.

The nutritive composition (feed specifications see Appendix, page 43) and the contaminant content of the standard diet were routinely checked and analysed in random samples.

The tap water corresponded to drinking water quality (10). Results of the water analyses are kept at BAYER AG. The available data gave no indication that the test objective was being influenced.

Polycarbonate bottles holding approx. 750 ml were used for drinking during the adaptation time and test period (6, 9).

6.4. Test methods

The methodology of the investigations was applied in conformity with the following guidelines:

OECD Guideline for Testing of Chemicals; Section 4: Health Effects, No. 401 "Acute Oral Toxicity", adopted: 24th February 1987 (1).

Pesticide Assessment Guidelines, Subdivision F, Hazard Evaluation: Human and Domestic Animals, Series 81-1 Acute Oral Toxicity Study, (Revised Edition, November 1984) (2).

6.5. Methodology

6.5.1. Formulation of the test substance

The test substance was prepared in the form of a solution immediately (<1hour) before each administration in pharmaceutical peanut oil (DAB 10). An analytical examination of the stability of the test substance in the administered formulation was not carried out.

6.5.2. Randomisation and identification of the animals

The animals were selected before administration on the basis of their body weight classes and when several groups per administration day and sex were used the animals were allocated to the treatment groups with the aid of random lists produced with a calculating program on a computer (HP 3000). Deviating from this, 20 animals were not randomly allocated to the treatment groups.

The identification of the animals was carried out by fixing cage tags specifying the test substance, animal number, dose, sex and study number, by individual marking with aqueous, saturated picric acid solution and by animal numbering on the tail with a water-resistant fibretip pen.

6.5.3. Administration and dosage

The test substance was administered p.o. by means of an oesophageal tube to fasting (fasting time: approx. 17 hours before administration, ± 1 hour deviation) male and female rats (5 animals per study group).

The administration volume was 5 ml/kg b.w..

Food was given again to the animals two hours after administration.

6.5.4. Investigations

6.5.4.1. Clinical observation

The appearance and behaviour on the day of administration were recorded several times and thereafter at least once per day. Where symptoms occurred, the nature, duration and intensity of the symptoms were determined by individual assessment.
They are summarised as group incidences and individual animal findings in the Appendix. If deaths occurred, the time of death was recorded.

The times refer to the time of administration on the day of administration (1st study day). For a better overall view, times over one hour are rounded up to quarter hours. The time of the first occurrence of a symptom is specified and on the day of administration the time at which a symptom is no longer observed. On the following days, the study day is specified on which a symptom is observed for the last time.

The times specified in days represent study days. If symptoms do not reappear after an unobserved interval between two study days (e.g. overnight), it is assumed that these symptoms were observed during the whole previous study day.

Correspondingly, deaths which appeared during this unobserved interval (e.g. overnight) are assigned to the previous study day.

During clinical observation all observed findings deviating from the normal state are recorded, whereby special attention is given to the following organ systems, localisations and physiological functions:

Appearance (fur, skin colour, oedemas, eyes, flow of tears, nasal secretion and salivation etc.)

Behaviour (grooming, sound, excitement, aggressivity, digging and cleaning actions, cannibalism etc.)

Nervous system (apathy, motility, reflexes, gait, paralysis, spasms, tremors etc.)

Respiration (as far as assessable, e.g. frequency etc.)

Circulation (as far as assessable, e.g. heart rate, pallor etc.)

Posture (abdominal and lateral position etc.)

Gastrointestinal function (faecal quality etc.)

6.5.4.2. Post-treatment observation

The post-treatment observation period was 14 days.

6.5.4.3. Body weights

The body weights of the rats were calculated on the 1st day before administration and on the 4th, 8th and 15th day.
The last weight recorded for an animal sacrificed at the end of the post-treatment observation period was given as its final weight; in the case of animals which died during the study, the weight on the day of death was taken as the final weight.

6.5.4.4. Necropsy

At the end of the post-treatment observation period the animals were anaesthetised and sacrificed by inhalation of diethyl ether. Afterwards they were examined by gross pathology.

6.5.5. LD50 calculation

If calculation of the median lethal dose (LD50) is possible, it is carried out by computer (HP 3000) according to BLISS (4, 5) in a form described by ROSIELLO et al. (8) and BAIRD et al. (3).

Detailed information about the calculation program can be taken from the report by PAULUHN (7).

7. RESULTS

7.1. Dose-response table (LD50)

The results of the investigations of acute oral toxicity in rats with data on the LD50 are summarized in the following table 1:

Table 1:

Dose mg/kg b.w.	Toxicol. results*	Duration of signs	Time of death	Mortality (%)
		rat - male		
100.0	0 / 0 / 5	3h45m-1d	--	0
1000.0	0 / 5 / 5	35m-9d	--	0
1400.0	2 / 5 / 5	11m-6d	1d	40
1600.0	2 / 5 / 5	1h-10d	1d	40
1700.0	4 / 5 / 5	15m-5d	1d-2d	80
2000.0	5 / 5 / 5	17m-1d	1d	100

LD50 = 1524 mg/kg b.w.
Confidence interval (95%) = 1378.2 - 1685.7 mg/kg b.w.
slope = 5.90

		rat - female		
100.0	0 / 0 / 5	4h-1d	--	0
1000.0	1 / 5 / 5	50m-8d	2d	20
1250.0	1 / 5 / 5	21m-9d	2d	20
1600.0	4 / 5 / 5	1h15m-8d	2d-3d	80

LD50 = 1342 mg/kg b.w.
Confidence interval (95%) = 1107.2 - 1627.6 mg/kg b.w.
slope = 3.85

*: 1st figure = number of dead animals
2nd figure = number of animals with symptoms
3rd figure = number of animals in the group

7.2. Clinical findings

After the administration of 100 mg/kg b.w. male and female animals showed moist anuses.

From 1000 mg/kg b.w. apathy, piloerection, decreased motility, spastic gait and laboured breathing were observed in both sexes.
The male animals additionally showed soft faeces and narrowed palpebral fissures in all dose groups from 1000 mg/kg b.w. In the female animals, these symptoms were only determined in isolated cases. Female animals showed occasional trembling and had reddish-brown discoloured wood chippings in the litter. Polyuria, moist anuses, accelerated breathing, spasms, pallor, prostration and decelerated breathing occurred in isolated groups.

For group incidences, see pages 22 to 24 in the Appendix; for individual animal findings, see pages 25 to 32 in the Appendix.

7.3. Body weights

The body weight development of the dose groups > 1000 mg/kg b.w. was reduced during the post-treatment observation period in both sexes compared to animals in the 100 mg/kg b.w. dose groups.

Individual and mean values see pages 33 to 35 in the Appendix.

7.4 Gross pathology findings

Gross pathology findings were detected in different incidences and intensity in the lungs, kidneys, stomach, intestine, liver, spleen and thoracic and abdominal cavities of the animals that died during the post-treatment observation period.

The animals which were sacrificed at the end of the post-treatment observation period showed adhesions of the liver, stomach, spleen and kidneys with the abdominal wall. In addition, various findings were observed in the stomach.

Individual necropsy findings, see pages 36 - 41 in the Appendix.

8. DISCUSSION AND ASSESSMENT

Investigations of acute oral toxicity were carried out in male and female rats with the test substance ethyloil. An LD50 of 1524 mg/kg b.w. was determined for male rats and 1342 mg/kg b.w. for female rats.

Deaths occurred in the male animals from a dose of 1400 mg/kg b.w., in the female animals from 1000 mg/kg b.w..

The clinical symptoms mainly occurred in a moderate form in both sexes 11 m at the earliest after administration and lasted up to the 9th (m) or 10th day (f) at the most. Apathy, decreased motility, spastic gait, trembling, spasms and prostration were determined as symptoms in different incidences and intensity. Moreover, dyspnoea, polyuria, soft faeces, narrowed palpebral fissures and piloerection as well as pallor were observed. Occasionally, the cage litter was discoloured reddish-brown. This is mainly attributable to a discolouration of the urine.

On gross pathology, findings were detected in the lungs, liver, spleen, kidneys and in the gastro-intestinal tract. Especially striking were the adhesions in the abdominal cavity and the severe changes in the gastric mucosa. Furthermore, severe swellings were observed as well as purulent and ulcerous foci which can be regarded as the local chemical effect of the test substance on the mucosa. This led to puncturing of the gastric mucosa and thus to peritonitis. Since the test substance is known to have a corrosive potential on skin, this gross-pathology finding can be considered as corrosive gastritis which was not reversible within the post-treatment observation period.

After the administration of 100 mg/kg b.w. only a moist anus was observed in male and female animals; this was mainly attributable to the oily formulating agent. Other symptoms or changes visible on gross pathology did not occur. The dose was therefore tolerated without any visible effects.

As a result of this, the test substance ethyloil proved to have moderate to low toxicity after acute oral administration in male and female rats.

9. REFERENCES

(1) Third addendum to the 1981 OECD Guidelines for Testing of Chemicals, OECD Publication Service, Paris 1987.

(2) Pesticide Assessment Guidelines, Subdivision F, Hazard Evaluation: Human and Domestic Animals, Series: 81-1 Acute Oral Toxicity Study (Revised Edition, November 1984), U.S. Environmental Protection Agency, Washington D.C., 20460, National Technical Information Service, US Department of Commerce, Springfield, VA. 22161.

(3) BAIRD, J.B. and R.L. BALSTER:
Analysis of Nominal Dose-Effect Data with an Advanced Programmable Calculator.
Neurobehaviour. Tox. 1, 73-77 (1979).

(4) BLISS, C.I.:
The calculation of the dosage-mortality curve.
Ann. Appl. Biol. 22, 134 (1935).

(5) BLISS, C.I.:
The determination of the dosage-mortality curve from small numbers.
Q.J. Pharm. Pharmacol. 11, 192-216 (1938).

(6) MEISTER, G.:
Versuchstierkäfige für die Haltung und Zucht von Kleinnagern.
Zeitschrift Versuchstierkunde 7, 144-153 (1965).

(7) PAULUHN, J.:
Über die computergestützte Abschätzung der LD50/LC50
BAYER AG Bericht-Nr.: 11835 (1983).

(8) ROSIELLO, A.P., J.M. ESSIGMANN und G.N. WOGAN.
Rapid and accurate determination of the median lethal dose (LD50) and its error with a small computer.
J. Toxicol. Environ. Health 3, 797-809 (1977).

(9) SPIEGEL, A. und R. GÖNNERT
Neue Käfige für Mäuse und Ratten.
Zschr. Versuchstierkunde 1, 38-46 (1961).

(10) Trinkwasserverordnung vom 5.12.1990, Bundesgesetzblatt Nr. 66 Jahrgang 1990, Teil I, ausgegeben am 12.12.1990, Seite 2612-2629.

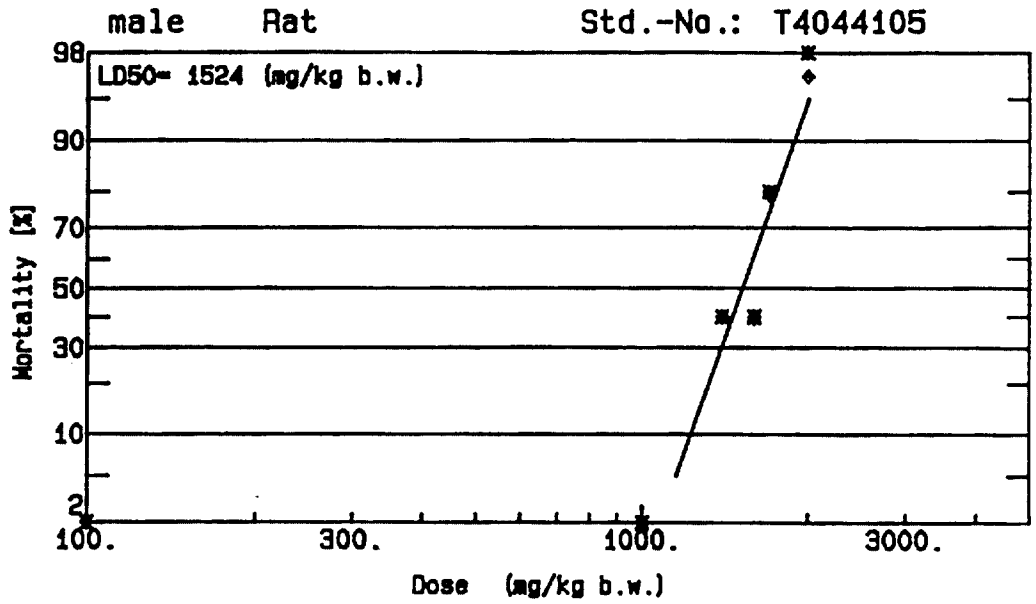
10. LIST OF ABBREVIATIONS

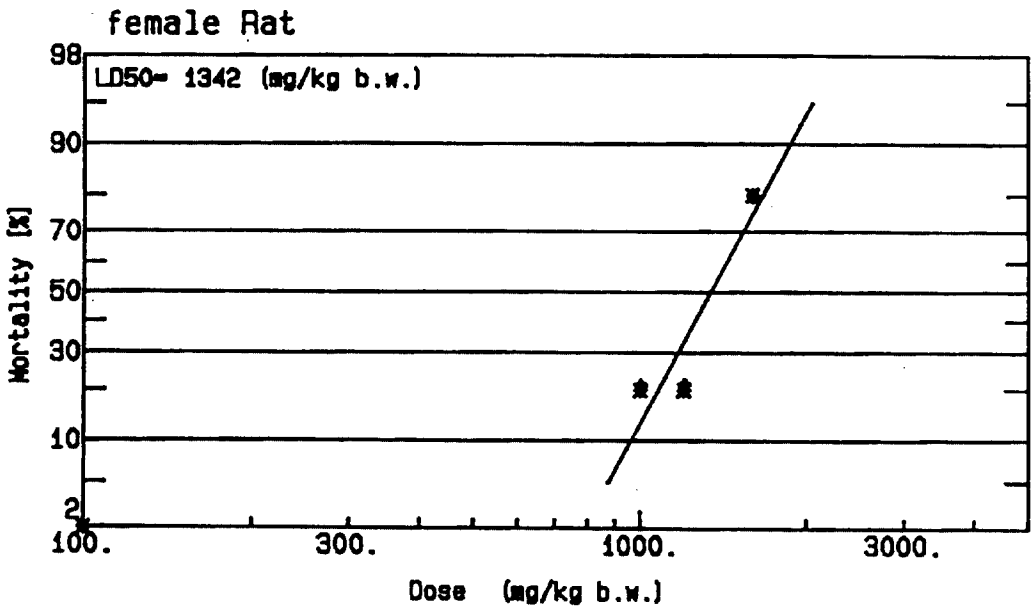
C.A.	Chemical Abstracts
ca.	approximately
CAS	Chemical Abstracts Service
c.n.	common name
d	day
et al.	and others
etc.	et cetera
h	hours
b.w.	body weight
m	minutes
no.	number
n.o.e.	no observed effect
toxicol.	toxicological
e.g.	for example

11. ANHANG/ANNEX

11.1. Graphische Dartsellung der LD50

Abbildung 1: Akute orale Toxizität
Fig. 1: Acute oral toxicity





✱ experimental data
◆ Bliss corrected data

11.2. CLINICAL FINDINGS / KLINISCHE BEFUNDE

GROUP INCIDENCES / GRUPPENINZIDENZEN

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Symptom	NOA* Anz.	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
100 mg/kg	moist anus / feuchter After	5	3h45 - 1d	
1000 mg/kg	piloerection / gesträubtes Fell	5	2h15 - 7d	2
	apathy / Apathie	5	35m - 9d	2
	decreased motility / verminderte Motilität	5	35m - 6d	1
	spastic gait / spastischer Gang	5	5h - 6d	2
	accelerated breathing / beschleunigte Atmung	1	5d - 6d	1
	labored breathing / erschwerte Atmung	1	2d - 6d	1
	increased excretion of urine / vermehrte Urinausscheidung	5	6d - 6d	1
	soft feces / weicher Kot	3	44m - 6d	
	moist anus / feuchter After	2	5d - 6d	
	narrowed palpebral fissure / verengte Lidspalte	2	5d - 6d	
1400 mg/kg	animal died / Tier gestorben	2	1d -	
	piloerection / gesträubtes Fell	5	2h30 - 6d	2
	apathy / Apathie	5	11m - 6d	2
	decreased motility / verminderte Motilität	5	23m - 4d	2
	spastic gait / spastischer Gang	3	4h - 4d	1
	spasmodic state / Verkrampfung	1	1h45 - 4h	1
	labored breathing / erschwerte Atmung	5	16m - 4d	2
	increased excretion of urine / vermehrte Urinausscheidung	3	3d - 4d	
	soft feces / weicher Kot	5	11m - 2d	
	narrowed palpebral fissure / verengte Lidspalte	1	1h - 1d	
1600 mg/kg	animal died / Tier gestorben	2	1d -	
	piloerection / gesträubtes Fell	5	1h - 9d	2
	apathy / Apathie	5	1h - 10d	2
	decreased motility / verminderte Motilität	5	1h - 6d	2
	spastic gait / spastischer Gang	5	1h - 8d	2
	temporary tremor / zeitweise Zittern	2	2d - 2d	2
	labored breathing / erschwerte Atmung	3	1h - 8d	2
	soft feces / weicher Kot	5	1h - 3d	
	moist anus / feuchter After	3	3d - 6d	
	narrowed palpebral fissure / verengte Lidspalte	4	1h45 - 3d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark
* NOA/Anz. = Number of animals showing symptom / Anzahl der Tiere mit dem Symptom

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Symptom	NOA* Anz.	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
1700 mg/kg	animal died / Tier gestorben	4	1d - 2d	
	piloerection / gesträubtes Fell	5	1h45 - 4d	2
	apathy / Apathie	5	15m - 5d	2
	decreased motility / verminderte Motilität	5	20m - 3d	2
	spastic gait / spastischer Gang	5	1h45 - 3d	2
	spasmodic state / Verkrampfung	1	15m - 55m	1
	labored breathing / erschwerte Atmung	5	15m - 4d	1
	soft feces / weicher Kot	5	55m - 3d	
	narrowed palpebral fissure / verengte Lidspalte	5	20m - 2d	
2000 mg/kg	animal died / Tier gestorben	5	1d -	
	piloerection / gesträubtes Fell	5	1h30 - 1d	2
	apathy / Apathie	5	17m - 1d	2
	decreased motility / verminderte Motilität	5	32m - 1d	2
	spastic gait / spastischer Gang	5	1h15 - 1d	2
	labored breathing / erschwerte Atmung	5	1h15 - 1d	2
	soft feces / weicher Kot	5	32m - 1d	
	moist anus / feuchter After	1	3h30 - 1d	
	narrowed palpebral fissure / verengte Lidspalte	5	37m - 1d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark
* NOA/Anz. = Number of animals showing symptom / Anzahl der Tiere mit dem Symptom

Printing date/Druckdatum: 26.04.1993

Dose Dosis	Symptom	NOA* Anz.	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
female animals / weibliche Tiere				
100 mg/kg	moist anus / feuchter After	5	4h - 1d	
1000 mg/kg	animal died / Tier gestorben	1	2d -	
	piloerection / gesträubtes Fell	5	2h15 - 6d	2
	apathy / Apathie	5	50m - 8d	2
	decreased motility / verminderte Motilität	5	50m - 4d	2
	spastic gait / spastischer Gang	5	5h - 5d	1
	temporary tremor / zeitweise Zittern	1	2d - 2d	2
	labored breathing / erschwerte Atmung	3	2d - 3d	1
	soft feces / weicher Kot	3	55m - 2d	
	shavings discolored red-brown / Späne rot-braun verfärbt	4	3d - 3d	
1250 mg/kg	animal died / Tier gestorben	1	2d -	
	piloerection / gesträubtes Fell	5	1h30 - 8d	2
	pallor / Blässe	1	4d - 8d	1
	apathy / Apathie	5	21m - 9d	2
	decreased motility / verminderte Motilität	5	34m - 8d	3
	spastic gait / spastischer Gang	5	34m - 9d	2
	prostration / Bauchlage	1	2d - 2d	
	spasmodic state / Verkrampfung	1	2d - 3d	2
	temporary tremor / zeitweise Zittern	1	2d - 2d	1
	decelerated breathing / verlangsamte Atmung	1	2d - 2d	
	labored breathing / erschwerte Atmung	5	1h15 - 5d	1
	soft feces / weicher Kot	5	34m - 1d	
	moist anus / feuchter After	5	3h45 - 5d	
	narrowed palpebral fissure / verengte Lidspalte	3	46m - 1d	
	shavings discolored red-brown / Späne rot-braun verfärbt	4	3d - 3d	
1600 mg/kg	animal died / Tier gestorben	4	2d - 3d	
	piloerection / gesträubtes Fell	4	1h45 - 8d	2
	pallor / Blässe	1	4d - 5d	
	pallor / Blässe	1	7d - 8d	
	apathy / Apathie	5	1h15 - 8d	2
	decreased motility / verminderte Motilität	5	1h15 - 4d	2
	spastic gait / spastischer Gang	4	1h15 - 6d	2
	spasmodic state / Verkrampfung	2	2d - 6d	2
	temporary tremor / zeitweise Zittern	2	2d - 3d	2
	labored breathing / erschwerte Atmung	5	1h15 - 4d	2
	moist anus / feuchter After	2	2d - 3d	
	narrowed palpebral fissure / verengte Lidspalte	4	1h45 - 3d	
	shavings discolored red-brown / Späne rot-braun verfärbt	3	3d - 6d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark
* NOA/Anz. = Number of animals showing symptom / Anzahl der Tiere mit dem Symptom

INDIVIDUAL ANIMAL SYMPTOMS / TIERINDIVIDUELLE SYMPTOME

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
100 mg/kg	21	moist anus / feuchter After	3h45 - 1d	
	22	moist anus / feuchter After	3h45 - 1d	
	23	moist anus / feuchter After	3h45 - 1d	
	24	moist anus / feuchter After	3h45 - 1d	
	25	moist anus / feuchter After	3h45 - 1d	
1000 mg/kg	1	piloerection / gesträubtes Fell	2h15 - 2d	2
		piloerection / gesträubtes Fell	4d - 6d	1
		apathy / Apathie	35m - 7d	2
		decreased motility / verminderte Motilität	35m - 2d	1
		spastic gait / spastischer Gang	5h - 2d	1
		spastic gait / spastischer Gang	4d - 4d	1
		accelerated breathing / beschleunigte Atmung	5d - 6d	1
		increased excretion of urine / vermehrte Urinausscheidung	6d - 6d	1
		soft feces / weicher Kot	44m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	5d - 6d	
	2	piloerection / gesträubtes Fell	2h15 - 2d	2
		apathy / Apathie	35m - 5d	2
		decreased motility / verminderte Motilität	35m - 1d	1
		spastic gait / spastischer Gang	5h - 1d	1
		increased excretion of urine / vermehrte Urinausscheidung	6d - 6d	1
	3	piloerection / gesträubtes Fell	2h15 - 6d	2
		apathy / Apathie	35m - 9d	2
		decreased motility / verminderte Motilität	35m - 2d	1
		spastic gait / spastischer Gang	5h - 2d	1
		increased excretion of urine / vermehrte Urinausscheidung	6d - 6d	1
		soft feces / weicher Kot	44m - 2d	
	4	piloerection / gesträubtes Fell	2h15 - 6d	2
		apathy / Apathie	35m - 9d	2
		decreased motility / verminderte Motilität	35m - 6d	1
		spastic gait / spastischer Gang	5h - 6d	2
		labored breathing / erschwerte Atmung	2d - 6d	1
		increased excretion of urine / vermehrte Urinausscheidung	6d - 6d	1
		moist anus / feuchter After	5d - 6d	
		narrowed palpebral fissure / verengte Lidspalte	5d - 6d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
1000 mg/kg	5	piloerection / gesträubtes Fell	2h15 - 7d	2
		apathy / Apathie	35m - 9d	2
		decreased motility / verminderte Motilität	35m - 6d	1
		spastic gait / spastischer Gang	5h - 6d	1
		increased excretion of urine / vermehrte Urinausscheidung	6d - 6d	1
		soft feces / weicher Kot	44m - 6d	
		moist anus / feuchter After	5d - 6d	
1400 mg/kg	41	piloerection / gesträubtes Fell	4h - 6d	2
		apathy / Apathie	11m - 6d	2
		decreased motility / verminderte Motilität	23m - 4d	1
		spastic gait / spastischer Gang	3d - 4d	1
		labored breathing / erschwerte Atmung	2d - 4d	1
		increased excretion of urine / vermehrte Urinausscheidung	3d - 4d	
		soft feces / weicher Kot	11m - 2d	
	42	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	2h30 - 1d	2
		apathy / Apathie	11m - 1d	2
		decreased motility / verminderte Motilität	23m - 1d	2
		labored breathing / erschwerte Atmung	16m - 1d	2
		soft feces / weicher Kot	16m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	1h - 1d	
	43	piloerection / gesträubtes Fell	3d - 5d	1
		apathy / Apathie	11m - 5d	2
		decreased motility / verminderte Motilität	23m - 4d	1
		spastic gait / spastischer Gang	4h - 4d	1
		labored breathing / erschwerte Atmung	2d - 4d	1
		increased excretion of urine / vermehrte Urinausscheidung	3d - 4d	
		soft feces / weicher Kot	29m - 2d	
	44	piloerection / gesträubtes Fell	2d - 4d	2
		apathy / Apathie	11m - 6d	2
		decreased motility / verminderte Motilität	23m - 4d	1
		spastic gait / spastischer Gang	4h - 4d	1
		labored breathing / erschwerte Atmung	3d - 4d	1
		increased excretion of urine / vermehrte Urinausscheidung	3d - 4d	
		soft feces / weicher Kot	29m - 2d	
	45	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	4h - 1d	1
		apathy / Apathie	11m - 1d	1
		decreased motility / verminderte Motilität	23m - 1d	1
		spasmodic state / Verkrampfung	1h45 - 4h	1
		labored breathing / erschwerte Atmung	2h30 - 1d	1
		soft feces / weicher Kot	1h45 - 1d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
1600 mg/kg	11	piloerection / gesträubtes Fell	3h15 - 5d	1
		apathy / Apathie	1h - 10d	2
		decreased motility / verminderte Motilität	1h - 3d	1
		spastic gait / spastischer Gang	3h15 - 5d	1
		temporary tremor / zeitweise Zittern	2d - 2d	2
		soft feces / weicher Kot	1h - 2d	
		moist anus / feuchter After	3d - 3d	
		narrowed palpebral fissure / verengte Lidspalte	2d - 2d	
	12	piloerection / gesträubtes Fell	3h15 - 6d	2
		apathy / Apathie	1h - 10d	2
		decreased motility / verminderte Motilität	1h - 6d	2
		spastic gait / spastischer Gang	3h15 - 8d	2
		temporary tremor / zeitweise Zittern	2d - 2d	2
		labored breathing / erschwerte Atmung	1h - 6d	1
		soft feces / weicher Kot	1h - 3d	
		moist anus / feuchter After	4d - 6d	
		narrowed palpebral fissure / verengte Lidspalte	2d - 2d	
	13	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	3h15 - 1d	1
		apathy / Apathie	1h - 1d	2
		decreased motility / verminderte Motilität	1h - 1d	1
		spastic gait / spastischer Gang	3h15 - 1d	1
		soft feces / weicher Kot	1h - 1d	
	14	piloerection / gesträubtes Fell	1h - 9d	2
		apathy / Apathie	1h - 10d	2
		decreased motility / verminderte Motilität	1h - 6d	2
		spastic gait / spastischer Gang	1h - 8d	2
		labored breathing / erschwerte Atmung	1h - 8d	2
		soft feces / weicher Kot	2d - 3d	
		moist anus / feuchter After	4d - 6d	
		narrowed palpebral fissure / verengte Lidspalte	3h15 - 3d	
	15	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	3h15 - 1d	2
		apathy / Apathie	1h - 1d	2
		decreased motility / verminderte Motilität	1h - 1d	2
		spastic gait / spastischer Gang	1h - 1d	2
		labored breathing / erschwerte Atmung	1h - 1d	2
		soft feces / weicher Kot	1h - 1d	
		narrowed palpebral fissure / verengte Lidspalte	1h45 - 1d	
1700 mg/kg	46	piloerection / gesträubtes Fell	1h45 - 4d	2
		apathy / Apathie	15m - 5d	2
		decreased motility / verminderte Motilität	55m - 3d	2
		spastic gait / spastischer Gang	1h45 - 3d	2
		spasmodic state / Verkrampfung	15m - 55m	1
		labored breathing / erschwerte Atmung	15m - 4d	1
		soft feces / weicher Kot	55m - 3d	
		narrowed palpebral fissure / verengte Lidspalte	20m - 1d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
1700 mg/kg	47	animal died / Tier gestorben	2d -	
		piloerection / gesträubtes Fell	1h45 - 2d	2
		apathy / Apathie	15m - 2d	2
		decreased motility / verminderte Motilität	20m - 2d	2
		spastic gait / spastischer Gang	1h45 - 2d	2
		labored breathing / erschwerte Atmung	15m - 2d	1
		soft feces / weicher Kot	55m - 2d	
		narrowed palpebral fissure / verengte Lidspalte	5h - 1d	
	48	animal died / Tier gestorben	2d -	
		piloerection / gesträubtes Fell	1h45 - 2d	2
		apathy / Apathie	15m - 2d	2
		decreased motility / verminderte Motilität	20m - 2d	2
		spastic gait / spastischer Gang	1h45 - 2d	2
		labored breathing / erschwerte Atmung	15m - 2d	1
		soft feces / weicher Kot	55m - 2d	
		narrowed palpebral fissure / verengte Lidspalte	5h - 1d	
	49	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	1h45 - 1d	2
		apathy / Apathie	15m - 1d	2
		decreased motility / verminderte Motilität	20m - 1d	2
		spastic gait / spastischer Gang	1h45 - 1d	2
		labored breathing / erschwerte Atmung	15m - 1d	1
		soft feces / weicher Kot	55m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	5h - 1d	
	50	animal died / Tier gestorben	2d -	
		piloerection / gesträubtes Fell	1h45 - 2d	2
		apathy / Apathie	15m - 2d	2
		decreased motility / verminderte Motilität	20m - 2d	2
		spastic gait / spastischer Gang	1h45 - 2d	2
		labored breathing / erschwerte Atmung	15m - 2d	1
		soft feces / weicher Kot	55m - 2d	
		narrowed palpebral fissure / verengte Lidspalte	20m - 2d	
2000 mg/kg	31	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	1h30 - 1d	2
		apathy / Apathie	17m - 1d	2
		decreased motility / verminderte Motilität	32m - 1d	2
		spastic gait / spastischer Gang	1h15 - 1d	1
		labored breathing / erschwerte Atmung	1h15 - 1d	2
		soft feces / weicher Kot	32m - 1d	
		moist anus / feuchter After	3h30 - 1d	
		narrowed palpebral fissure / verengte Lidspalte	37m - 1d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
male animals / männliche Tiere				
2000 mg/kg	32	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	1h30 - 1d	2
		apathy / Apathie	17m - 1d	2
		decreased motility / verminderte Motilität	32m - 1d	2
		spastic gait / spastischer Gang	3h30 - 1d	2
		labored breathing / erschwerte Atmung	1h15 - 1d	2
		soft feces / weicher Kot	40m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	37m - 3h30	
	33	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	1h30 - 1d	2
		apathy / Apathie	17m - 1d	2
		decreased motility / verminderte Motilität	32m - 1d	2
		spastic gait / spastischer Gang	3h30 - 1d	2
		labored breathing / erschwerte Atmung	1h15 - 1d	2
		soft feces / weicher Kot	40m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	37m - 1d	
	34	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	1h30 - 1d	2
		apathy / Apathie	17m - 1d	2
		decreased motility / verminderte Motilität	32m - 1d	2
		spastic gait / spastischer Gang	1h15 - 1d	2
		labored breathing / erschwerte Atmung	1h15 - 1d	1
		soft feces / weicher Kot	40m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	1h30 - 1d	
	35	animal died / Tier gestorben	1d -	
		piloerection / gesträubtes Fell	1h30 - 1d	2
		apathy / Apathie	17m - 1d	2
		decreased motility / verminderte Motilität	32m - 1d	2
		spastic gait / spastischer Gang	1h15 - 1d	2
		labored breathing / erschwerte Atmung	1h15 - 1d	1
		soft feces / weicher Kot	40m - 1d	
		narrowed palpebral fissure / verengte Lidspalte	37m - 1d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 26.04.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
female animals / weibliche Tiere				
100 mg/kg	26	moist anus / feuchter After	4h - 1d	
	27	moist anus / feuchter After	4h - 1d	
	28	moist anus / feuchter After	4h - 1d	
	29	moist anus / feuchter After	4h - 1d	
	30	moist anus / feuchter After	4h - 1d	
1000 mg/kg	6	piloerection / gesträubtes Fell	2h15 - 5d	2
		apathy / Apathie	50m - 4d	2
		decreased motility / verminderte Motilität	50m - 1d	1
		spastic gait / spastischer Gang	5h - 1d	1
		soft feces / weicher Kot	55m - 1d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	7	piloerection / gesträubtes Fell	2h15 - 6d	2
		apathy / Apathie	50m - 8d	2
		decreased motility / verminderte Motilität	50m - 4d	1
		spastic gait / spastischer Gang	5h - 5d	1
		labored breathing / erschwerte Atmung	2d - 3d	1
		soft feces / weicher Kot	55m - 2d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	8	piloerection / gesträubtes Fell	2h15 - 5d	2
		apathy / Apathie	50m - 4d	2
		decreased motility / verminderte Motilität	50m - 3d	1
		spastic gait / spastischer Gang	5h - 4d	1
		labored breathing / erschwerte Atmung	2d - 3d	1
		soft feces / weicher Kot	2h15 - 2d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	9	piloerection / gesträubtes Fell	2h15 - 1d	
		apathy / Apathie	50m - 4d	
		decreased motility / verminderte Motilität	50m - 1d	
		spastic gait / spastischer Gang	5h - 2d	1
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	10	animal died / Tier gestorben	2d -	
		piloerection / gesträubtes Fell	2h15 - 2d	2
		apathy / Apathie	50m - 2d	2
		decreased motility / verminderte Motilität	50m - 2d	2
		spastic gait / spastischer Gang	5h - 2d	1
		temporary tremor / zeitweise Zittern	2d - 2d	2
		labored breathing / erschwerte Atmung	2d - 2d	1

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
female animals / weibliche Tiere				
1250 mg/kg	36	piloerection / gesträubtes Fell	1h30 - 3d	2
		apathy / Apathie	21m - 8d	2
		decreased motility / verminderte Motilität	34m - 4d	2
		spastic gait / spastischer Gang	34m - 8d	2
		temporary tremor / zeitweise Zittern	2d - 2d	1
		labored breathing / erschwerte Atmung	1h15 - 2d	1
		soft feces / weicher Kot	34m - 1d	
		moist anus / feuchter After	3h45 - 1d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	37	piloerection / gesträubtes Fell	1h30 - 4d	2
		apathy / Apathie	21m - 8d	2
		decreased motility / verminderte Motilität	34m - 4d	2
		spastic gait / spastischer Gang	1h30 - 3d	2
		labored breathing / erschwerte Atmung	1h15 - 3d	1
		soft feces / weicher Kot	34m - 1d	
		moist anus / feuchter After	3h45 - 1d	
		narrowed palpebral fissure / verengte Lidspalte	46m - 1d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	38	piloerection / gesträubtes Fell	1h30 - 8d	2
		pallor / Blässe	4d - 8d	1
		apathy / Apathie	21m - 9d	2
		decreased motility / verminderte Motilität	34m - 8d	2
		spastic gait / spastischer Gang	34m - 9d	2
		spasmodic state / Verkrampfung	2d - 3d	2
		labored breathing / erschwerte Atmung	1h15 - 5d	1
		soft feces / weicher Kot	34m - 1d	
		moist anus / feuchter After	3h45 - 5d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	39	animal died / Tier gestorben	2d -	
		piloerection / gesträubtes Fell	1h30 - 2d	1
		apathy / Apathie	21m - 2d	2
		decreased motility / verminderte Motilität	34m - 2d	3
		spastic gait / spastischer Gang	34m - 1d	2
		prostration / Bauchlage	2d - 2d	
		decelerated breathing / verlangsamte Atmung	2d - 2d	
		labored breathing / erschwerte Atmung	1h15 - 1d	1
		soft feces / weicher Kot	34m - 1d	
		moist anus / feuchter After	3h45 - 2d	
		narrowed palpebral fissure / verengte Lidspalte	46m - 3h45	
	40	piloerection / gesträubtes Fell	1h30 - 4d	1
		apathy / Apathie	21m - 5d	2
		decreased motility / verminderte Motilität	34m - 3d	1
		spastic gait / spastischer Gang	34m - 3d	2
		labored breathing / erschwerte Atmung	1h15 - 2d	1
		soft feces / weicher Kot	34m - 1d	
		moist anus / feuchter After	3h45 - 1d	
		narrowed palpebral fissure / verengte Lidspalte	46m - 3h45	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

Printing date/Druckdatum: 10.02.1993

Dose Dosis	Animal Tier	Symptom	Duration Dauer	Int.
Test article/Prüfmuster: Ethylöl				
female animals / weibliche Tiere				
1600 mg/kg	16	animal died / Tier gestorben	3d -	
		piloerection / gesträubtes Fell	3h15 - 3d	2
		apathy / Apathie	1h15 - 3d	2
		decreased motility / verminderte Motilität	1h15 - 3d	2
		spastic gait / spastischer Gang	1h15 - 3d	2
		temporary tremor / zeitweise Zittern	2d - 3d	2
		labored breathing / erschwerte Atmung	1h15 - 3d	1
		moist anus / feuchter After	2d - 3d	
		narrowed palpebral fissure / verengte Lidspalte	1h45 - 3d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	
	17	animal died / Tier gestorben	2d -	
		apathy / Apathie	1h15 - 2d	2
		decreased motility / verminderte Motilität	1h15 - 2d	2
		spastic gait / spastischer Gang	1h15 - 2d	1
		spasmodic state / Verkrampfung	2d - 2d	2
		temporary tremor / zeitweise Zittern	2d - 2d	2
		labored breathing / erschwerte Atmung	1h15 - 2d	1
		moist anus / feuchter After	2d - 2d	
		narrowed palpebral fissure / verengte Lidspalte	1h45 - 2d	
	18	animal died / Tier gestorben	2d -	
		piloerection / gesträubtes Fell	3h15 - 2d	2
		apathy / Apathie	1h15 - 2d	2
		decreased motility / verminderte Motilität	1h15 - 2d	2
		spastic gait / spastischer Gang	1h15 - 2d	2
		labored breathing / erschwerte Atmung	1h15 - 2d	2
		narrowed palpebral fissure / verengte Lidspalte	1h45 - 2d	
	19	piloerection / gesträubtes Fell	2d - 8d	2
		pallor / Blässe	4d - 5d	
		pallor / Blässe	7d - 8d	
		apathy / Apathie	1h15 - 8d	2
		decreased motility / verminderte Motilität	1h15 - 4d	1
		spastic gait / spastischer Gang	1h15 - 6d	1
		spasmodic state / Verkrampfung	2d - 6d	1
		labored breathing / erschwerte Atmung	1h15 - 4d	2
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 6d	
	20	animal died / Tier gestorben	3d -	
		piloerection / gesträubtes Fell	1h45 - 3d	2
		apathy / Apathie	1h15 - 3d	2
		decreased motility / verminderte Motilität	1h15 - 3d	2
		labored breathing / erschwerte Atmung	1h15 - 3d	2
		narrowed palpebral fissure / verengte Lidspalte	1h45 - 3d	
		shavings discolored red-brown / Späne rot-braun verfärbt	3d - 3d	

m=minute/Minute, h=hour/Stunde, d=day/Tag
Int.= intensity/Intensität 1=weak/schwach, 2=moderate/mäßig 3=strong/stark

11.2. Körpergewichte/Body weights

Männliche Tiere/male animals

Dosis mg/kg Dose mg/kg	Tier Nr. Animal No.	Tag /Day 1	4	8	15	Final-gewicht Final weight	Differenz * Difference*
100	21	177	200	213	241	241	64
	22	169	191	208	239	239	70
	23	182	193	216	250	250	68
	24	174	198	222	262	262	88
	25	173	203	225	263	263	90
	MW	175	197	217	251		
	S	4.8	4.9	6.8	11.3		
1000	1	176	167	183	216	216	40
	2	174	171	183	221	221	47
	3	181	166	176	204	204	23
	4	177	147	163	200	200	23
	5	172	166	174	201	201	29
	MW	176	163	176	208		
	S	3.4	9.4	8.2	9.5		
1400	41	169	172	185	223	223	54
	42	192+					
	43	184	182	204	245	245	61
	44	191	183	203	246	246	55
	45	171+					
	MW	181	179	197	238		
	S	10.9	6.1	10.7	13.0		
1600	11	176	162	170	184	184	8
	12	169	154	159	189	189	20
	13	169+					
	14	174	165	180	198	198	24
	15	179+					
	MW	173	160	170	190		
	S	4.4	5.7	10.5	7.1		

MW = Mittelwerte / mean values
S = Standardabweichung / standard deviation
Alle Gewichte in Gramm (g) / all weights in gram (g)
+ = Tier gestorben / animal died
* = Differenz Finalgewicht - Anfangsgewicht / difference final weight - weight at the beginning

11.2. Körpergewichte/Body weights

Männliche Tiere/male animals

Dosis mg/kg Dose mg/kg	Tier Nr. Animal No.	Tag /Day 1	4	8	15	Final-gewicht Final weight	Differenz * Difference*
1700	46	177	165	185	219	219	42
	47	173+				177	4
	48	177+				168	-9
	49	177+					
	50	182+				183	1
	MW	177	165	185	219		
	S	3.2	0.0	0.0	0.0		
2000	31	174+					
	32	176+					
	33	169+					
	34	175+					
	35	174+					
	MW	174					
	S	2.7					

MW = Mittelwerte / mean values
S = Standardabweichung / standard deviation
Alle Gewichte in Gramm (g) / all weights in gram (g)
+ = Tier gestorben / animal died
* = Differenz Finalgewicht - Anfangsgewicht / difference final weight - weight at the beginning

Körpergewichte/Body weights

Weibliche Tiere/female animals

Dosis mg/kg Dose mg/kg	Tier Nr. Animal No.	Tag /Day 1	4	8	15	Final-gewicht Final weight	Diffe-renz * Diffe-rence*
100	26	172	193	196	201	201	29
	27	182	197	203	209	209	27
	28	181	198	195	200	200	19
	29	179	182	186	189	189	10
	30	174	188	190	194	194	20
	MW	178	192	194	199		
	S	4.4	6.7	6.4	7.6		
1000	6	183	178	190	198	198	15
	7	173	161	175	201	201	28
	8	172	176	192	193	193	21
	9	181	171	187	198	198	17
	10	177+				186	9
	MW	177	172	186	198		
	S	4.8	7.6	7.6	3.3		
1250	36	174	168	180	193	193	19
	37	172	168	178	193	193	21
	38	184	172	168	174	174	-10
	39	180+				177	-3
	40	180	172	190	198	198	18
	MW	178	170	179	190		
	S	4.9	2.3	9.0	10.6		
1600	16	192+				183	-9
	17	178+				187	9
	18	185+				202	17
	19	183	175	191	210	210	27
	20	186+				190	4
	MW	185	175	191	210		
	S	5.1	0.0	0.0	0.0		

MW = Mittelwerte / mean values
S = Standardabweichung / standard deviation
Alle Gewichte in Gramm (g) / all weights in gram (g)
* = Differenz Finalgewicht - Anfangsgewicht / difference final weight - weight at the beginning

11.3. Individual gross pathology findings

Male rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
100	21		15d	n.o.e.
	22		15d	n.o.e.
	23		15d	n.o.e.
	24		15d	n.o.e.
	25		15d	n.o.e.
1000	1		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	2		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	3		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	4		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	5		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
1400	41		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall

Individual gross pathology findings

Male rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
	42	2d		Lungs spotty; liver lobe edge (left lateral lobe, intermediate part) approx. 0.5 cm wide discoloured beige-grey; kidneys pale, spotty, pelvis reddened; clear vessel markings of the stomach and in mesentery; structure of intestinal tract indistinct
	43		15d	One lobe of the liver (left lateral lobe) adhered to stomach, spleen and abdominal wall
	44		15d	One lobe of the liver (left lateral lobe) adhered to stomach, spleen and abdominal wall
	45	2d		Lungs, liver and spleen spotty; renal pelvis reddened; clear vessel markings of the stomach and in mesentery; structure of intestinal tract indistinct
1600	11		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	12		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow, liver slightly swollen
	13	1d		Kidney spotty, renal pelvis reddened
	14		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow, liver slightly swollen

Individual gross pathology findings

Male rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
	15	1d		Lungs slightly distended; kidneys spotty, renal pelvis reddened; intestinal tract amorphous
1700	46		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	47	3d		Slightly red liquid in thoracic cavity; abdominal cavity highly decomposed, not assessable
	48	3d		Slightly red liquid in thoracic cavity; liver and spleen spotty; kidneys pale, renal pelvis reddened; stomach contents dark, almost black
	49	2d		Lungs spotty; liver and spleen spotty; kidneys pale, renal pelvis reddened; intestinal tract amorphous
	50	3d		Slightly red liquid in thoracic cavity; liver, spleen and kidneys spotty; distinct vessel markings of stomach; stomach swollen with food and wood chippings; mucosa peeling in cardiac part of the stomach
2000	31	1d		Liver, spleen and kidneys spotty; renal pelvis reddened; distinct vessel markings of stomach and intestinal tract
	32	1d		Liver, spleen and kidneys spotty; renal pelvis reddened; distinct vessel markings of stomach and intestinal tract
	33	1d		Liver, spleen and kidneys spotty; renal pelvis reddened; distinct vessel markings of stomach and intestinal tract

Individual gross pathology findings

Male rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
(cont'd)				
	34	1d		Liver, spleen and kidneys spotty; renal pelvis reddened; distinct vessel markings of stomach and intestinal tract
	35	1d		Liquid in the lungs; liver, spleen and kidneys spotty; renal pelvis reddened; distinct vessel markings of stomach and intestinal tract

Individual gross pathology findings

Female rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
100	26		15d	n.o.e.
	27		15d	n.o.e.
	28		15d	n.o.e.
	29		15d	n.o.e.
	30		15d	n.o.e.
1000	6		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	7		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	8		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	9		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	10	2d		Clear liquid in thoracic cavity; renal pelvis slightly reddened; stomach swollen with wood chippings and food, gastric gland reddened; intestinal tract filled with yellowish liquid

Individual gross pathology findings

Female rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
1250	36		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	37		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	38		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	39	2d		Clear liquid in thoracic cavity; liver slightly swollen, clear marking of the lobules, one lobe of the liver (left lateral lobe) partially discoloured beige; renal pelvis reddened; clea vessel markings of the stomach; isolated ulcerous foci in gastric gland
	40		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow

Individual gross pathology findings

Female rats

Dose mg/kg	Animal No.	Time of death	Sacrificed on	Findings
1600	16	4d		Liver spotty, slight marking of the lobules; renal pelvis reddened; gastric gland slightly reddened, with isolated ulcerous foci, contents dark, almost black; caecum reddened
	17	2d		Renal pelvis reddened; cardiac part of the stomach clear vessel marking
	18	2d		Clear liquid in thoracic cavity; liver spotty; renal pelvis reddened; animal slightly decomposed
	19		15d	One lobe of the liver (left lateral lobe), stomach, spleen and left kidney adhered to the abdominal wall; cardiac part of the stomach hardened, mucosa thickened, contents whitish-yellow
	20	4d		Clear liquid in abdominal cavity; abdominal wall discoloured yellow; liver pale, clear marking of the lobules, slightly swollen, one lobe of the liver (caudate process) discoloured yellow; kidneys apparently enlarged, dark, spotty; stomach swollen with food and wood chippings; intestinal tract empty; bladder swollen with clear liquid

11.4. Analysenzertifikate/Analytical certificates

11.4.1. Freigabe/Approval

Bayer AG
PF-E/Netzplanstelle

Approval of Active Ingredient Sample

Active Ingredient Sample TOX 3291

Sample: Ethylöl (O-Ethyl-thiophosphorsäurechlorid)

Product-No.: 780286

Indication: *Insecticide* /Vorstufe

Batch No.: *Ansatz 80327, 10.6.92*

Origin of sample: *DR. DÖSCHER, PF-P, ELB.*

Responsible Analyst: *Dr. Tengler* Laboratory: *ALD*

Analytical Methods: *GLC*

Approvals:

TOX	Purity	Approved until	Date of Analysis	Comment
3291-00	*93.80 %*	*28.01.93*	*28.07.92*	

31.7.92 Graßmäder
(Dr.Graßmäder, PF-E/NP)

A reserve sample will be retained.

11.4.2. Futterzusammensetzung/Composition of diet

ALTROMIN STANDARD DIETS
TOTALLY PATHOGENE FREE TPF®

1320 altromin international

Maintenance Diet Rats/Mice

Rohnährstoffe*	Nutrients*	
Rohprotein	Crude protein	19,0
Rohfett	Crude fat	4,0
Rohfaser	Crude fiber	6,0
Asche	Ash	7,0
Wasser	Moisture	13,5
N-freie Extraktstoffe	Nitrogen-free extract	50,5

Umsetzbare Energie[2]	Metabolizable Energy[2]	
Kcal/kg	Kcal/kg	2.850,0
MJ/kg	MJ/kg	11,9

Mineralstoffe*	Minerals*	
Calcium	Calcium	0,9
Phosphor	Phophorus	0,7
Magnesium	Magnesium	0,2
Natrium	Sodium	0,2
Kalium	Potassium	1,0

Aminosäuren* / Amino Acids*	
Lysine	0,90
Methionine	0,30
Cystine	0,30
Phenylalanine	0,80
Tyrosine	0,60
Arginine	1,10
Histidine	0,40
Tryptophane	0,20
Threonine	0,60
Isoleucine	0,80
Leucine	1,30
Valine	0,90

Spurenelemente** / Trace elements**		
Mangan/Manganese		75,0
Eisen	Iron	180,0
Kupfer	Copper	13,0
Zink	Zinc	70,0
Jod	Iodine	0,9
Fluor	Fluorine	15,0

Vitamine***	Vitamins***	Standard-Diet		Standard-Diet fortified	
Vitamin A	Vitamin A	15.000,0	IU	25.000,0	IU
Vitamin D_3	Vitamin D_3	600,0	IU	1.000,0	IU
Vitamin E	Vitamin E	75,0	mg	125,0	mg
Vitamin K_3	Vitamin K_3	3,0	mg	5,0	mg
Vitamin B_1	Vitamin B_1	18,0	mg	30,0	mg
Vitamin B_2	Vitamin B_2	12,0	mg	20,0	mg
Vitamin B_6	Vitamin B_6	9,0	mg	15,0	mg
Vitamin B_{12}	Vitamin B_{12}	24,0	mcg	40,0	mcg
Nikotinsäure	Nicotinic acid	36,0	mg	60,0	mg
Pantothensäure	Pantothenic acid	21,0	mg	35,0	mg
Folsäure	Folic acid	2,0	mg	3,0	mg
Biotin	Biotin	60,0	mcg	100,0	mcg
Cholin	Choline	600,0	mg	1.000,0	mg
Vitamin C	Vitamin C	36,0	mg	60,0	mg

* % in der Diät (Mittelwert) / average % content in the diet
** mg in 1 kg Diät (Mittelwert) / average mg content in 1 kg diet
*** Zusatz in 1 kg Diät / additive in 1 kg diet
1) EG-Empfehlung / EC recommended
2) berechnet / calculated

ALTROMIN Standard-Diäten garantieren größte Sicherheit bei Versuchen
ALTROMIN Standard Diets warrant experimental safety

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Donald W. Lamb, Ph.D.
Vice President, Product Safety & Regulatory Affairs
Miles, Inc.
Mobay Road
Pittsburgh, Pennsylvania 15205-9741

OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MAR 01 1994

This letter formally acknowledges EPA's receipt of information submitted by your organization under Section 8(e), the "substantial risk" information reporting provision of the Toxic Substances Control Act (TSCA). For your reference, copies of the first page(s) of your submission(s) are enclosed and display the TSCA Section 8(e) Document Control Number (i.e., 8EHQ-0000-0000 Init.) assigned by EPA to your submission(s). Please refer to this cited number when submitting follow-up or supplemental information.

Please note that all submitted correspondence will be placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA Section 8(e) policy statement (43 FR 11110, March 16, 1978).

Confidential submissions submitted pursuant to the TSCA Section 8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims, because substantiation of CBI claims is required at the same time the 8(e) CAP is submitted to EPA. (If not done so already, please ensure that this information is provided to the Agency). When substantiating any/all claims, answer the questions detailed in the following attachment.

For NON-[illegible]missions, any confidentiality claims should be supporte[illegible]mission of information as described in the attachme[illegible]

12438 A

Printed on Recycled Paper

CECATS/TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA:
Submission # 8EHQ- 0993 -12438 SEQ A

TYPE: IN. SUPP FLWP

SUBMITTER NAME: Miles Inc.

INFORMATION REQUESTED: FLWP DATE:
0501 NO INFO REQUESTED
0502 INFO REQUESTED (TECH)
0503 INFO REQUESTED (VOL ACTIONS)
0504 INFO REQUESTED (REPORTING RATIONALE)
DISPOSITION:
0639 REFER TO CHEMICAL SCREENING
0678 CAP NOTICE

VOLUNTARY ACTIONS:
0401 NO ACTION REPORTED
0402 STUDIES PLANNED/UNDERWAY
0403 NOTIFICATION OF WORKER/OTHERS
0404 LABEL/MSDS CHANGES
0405 PROCESS/HANDLING CHANGES
0406 APP/USE DISCONTINUED
0407 PRODUCTION DISCONTINUED
0408 CONFIDENTIAL

SUB. DATE: 09/14/93 OTS DATE: 09/20/93 CSRAD DATE: 10/08/93

CHEMICAL NAME:

CAS#
1498-64-2

INFORMATION TYPE:		P F C	INFORMATION TYPE:		P F C	INFORMATION TYPE:		P F C
0201	ONCO (HUMAN)	01 02 04	0216	EPI/CLIN	01 02 04	0241	IMMUNO (ANIMAL)	01 02 04
0202	ONCO (ANIMAL)	01 02 04	0217	HUMAN EXPOS (PROD CONTAM)	01 02 04	0242	IMMUNO (HUMAN)	01 02 04
0203	CELL TRANS (IN VITRO)	01 02 04	0218	HUMAN EXPOS (ACCIDENTAL)	01 02 04	0243	CHEM/PHYS PROP	01 02 04
0204	MUTA (IN VITRO)	01 02 04	0219	HUMAN EXPOS (MONITORING)	01 02 04	0244	CLASTO (IN VITRO)	01 02 04
0205	MUTA (IN VIVO)	01 02 04	0220	ECO/AQUA TOX	01 02 04	0245	CLASTO (ANIMAL)	01 02 04
0206	REPRO/TERATO (HUMAN)	01 02 04	0221	ENV. OCCC/REL/FATE	01 02 04	0246	CLASTO (HUMAN)	01 02 04
0207	REPRO/TERATO (ANIMAL)	01 02 04	0222	EMER INCI OF ENV CONTAM	01 02 04	0247	DNA DAM/REPAIR	01 02 04
0208	NEURO (HUMAN)	01 02 04	0223	RESPONSE REQEST DELAY	01 02 04	0248	PROD/USE/PROC	01 02 04
0209	NEURO (ANIMAL)	01 02 04	0224	PROD/COMP/CHEM ID	01 02 04	0251	MSDS	01 02 04
0210	ACUTE TOX. (HUMAN)	01 02 04	0225	REPORTING RATIONALE	01 02 04	0299	OTHER	01 02 04
0211	CHR. TOX. (HUMAN)	01 02 04	0226	CONFIDENTIAL	01 02 04			
0212	ACUTE TOX. (ANIMAL)	01 02 04	0227	ALLERG (HUMAN)	01 02 04			
0213	SUB ACUTE TOX (ANIMAL)	01 02 04	0228	ALLERG (ANIMAL)	01 02 04			
0214	SUB CHRONIC TOX (ANIMAL)	01 02 04	0239	METAB/PHARMACO (ANIMAL)	01 02 04			
0215	CHRONIC TOX (ANIMAL)	01 02 04	0240	METAB/PHARMACO (HUMAN)	01 02 04			

TRIAGE DATA: NON-CBI INVENTORY	ONGOING REVIEW	SPECIES	TOXICOLOGICAL CONCERN:	USE:	PRODUCTION:
YES (CONTINUE)	YES (DROP/RLEG)	RAT	LOW Acute Oral Toxicity	experimental pesticide	
NO (DROP)	NO (CONTINUE)		MED Acute Dermal Toxicity, Dermal Irritation		
DETERMINE	REFER:		HIGH		

COMMENTS: Non-CAP
Acute oral toxicity in the rat is low concern based on a calculated LD_{50} of 1342 mg/kg for females. Rats received doses ranging from 100-2000 mg/kg. Clinical signs include apathy, ↓ motility, abnormal gait (≥1700 mg/kg) piloerection (1000-1600 mg/kg), tremors (1000 mg/kg), spasms (1000-1700 mg/kg), prostration (1000 + 1250 mg/kg), tremors (1000, 1250 + 1600 mg/kg) etc.

Pathological changes of the lungs, liver, stomach, spleen + kidney were observed in rats dosed at ≥1000 mg/kg.

Acute dermal irritation in the rat is medium concern based on a LD_{50} of 336 mg/kg in female rats. Rats received single doses ranging from 50-1000 mg/kg. Clinical signs included apathy, ↓ motility, abnormal gait, trembling, spasms, ↓ reflexes + piloerection. (No effect doses stated). The test material caused severe dermal irritation during the test.