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Dear Sir or Madam:

Subject: Report submitted in accordance with the U. S. Environmental Protection Agency Statement of Interpretation and Enforcement Policy; Notification of Substantial Risk-Section 8(e) TSCA.

The following information is submitted in accordance with the above statement. The submission pertains to 3-nitro-1,2-benzenedicarbonitrile (CAS# 51762-67-5) and is being submitted because of signs of weakness observed in animals during an acute oral toxicity test.

We do not believe the information in this report reasonably supports the conclusion that the substance presents a substantial risk. It is, however, being submitted to enable the Agency to draw its own conclusions.

Groups of five male rats and five female rats were administered a single dose of the test compound by gavage at a dose level of 2000 mg/kg body weight. At this dose level, two males and all of the females died prior to study termination. Two additional dose groups, each consisting of five females, were administered single oral doses of 1000 or 500 mg/kg of the test material. No deaths were observed at the 1000 or 500 mg/kg dose levels.

Abnormal clinical signs observed in one or more animals at the 2000 mg/kg dose level included diarrhea, reduced amount of feces, discolored (bright yellow) urine, staining of the inguinal hair and the skin of the tail and/or feet, hypothermia, piloerection, and dehydration. Slight to moderate weakness was observed in all surviving males on days two through six; slight or moderate weakness was observed on day two in the two females that died on day two or day four. No signs of weakness were observed in females dosed at 500 or 1000 mg/kg. Clinical signs observed in one or more animals in these two dose groups included discolored urine (bright yellow), staining of the inguinal hair and skin of the tail and/or feet, and reduced amount of feces in one or more animals.

Treatment-related changes noted at necropsy included hemorrhage and necrosis in the glandular gastric mucosa.

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12/19/94

*R. Hays Bell, Ph.D., Vice-President and Director, Corporate Health, Safety, and Environment
Eastman Kodak Company, Rochester, NY 14652-6256*



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The test material has been used as a low-volume, site-limited intermediate for R & D purposes only. Eastman Kodak Company currently has no plans to make or use this chemical. We are not aware of any adverse health problems associated with the past manufacture or use of the test material. The original health hazard evaluation of this intermediate resulted in a "Health Hazards Unknown" rating. This rating was accompanied by a statement to employees to "Avoid all contact". If this chemical is used in the future, we will continue to handle the material in the same manner based on the new toxicology data.

Please contact me if additional information is required.

Sincerely,

A handwritten signature in black ink that reads "R. Hays Bell". The signature is written in a cursive style with a large initial "R" and a long, sweeping underline.

R. Hays Bell
(716) 722-5036

RHB:JAF

Enc.

STUDY TITLE

3-NITRO-1,2-BENZENEDICARBONITRILE
ACUTE DERMAL IRRITATION STUDY IN THE RABBIT

HAEL NUMBER: 94-0028 KAN: 529340
CAS REGISTRY NUMBER: 51762-67-5

FINAL REPORT

AUTHOR

Len Sakal, B.S.

PERFORMING LABORATORY

Toxicological Sciences Laboratory
Corporate Health and Environment Laboratories
Eastman Kodak Company
1100 Ridgeway Avenue
B-320 Kodak Park
Rochester, New York 14652-6272
USA

LABORATORY PROJECT ID

HAEL Number: 94-0028

STUDY SPONSOR

Eastman Kodak Company

STUDY COMPLETION DATE

May 12, 1994

QUALITY ASSURANCE INSPECTION STATEMENT

[21 CFR 58.35(B)(7), 40 CFR 792.35(B)(7), and 40 CFR 160.35(B)(7)]

STUDY: 94-0028-1 STUDY DIRECTOR: SHEPARD, K.P.
ACCESSION NUMBER: 529340

PAGE 1
05/09/94

STUDY TYPE: ACUTE DERMAL IRRITATION TEST

M. S. James
(AUDITOR, QUALITY ASSURANCE UNIT)

5/10/94
DATE

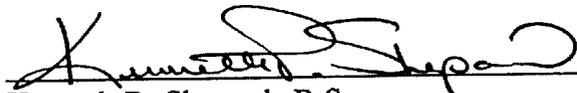
TO THE BEST OF MY KNOWLEDGE, THIS FINAL REPORT ACCURATELY DESCRIBES THE METHODS AND STANDARD OPERATING PROCEDURES, AND THE REPORTED RESULTS ACCURATELY REFLECT THE RAW DATA. THIS STUDY WAS INSPECTED BY 1 OR MORE PERSONS OF THE QUALITY ASSURANCE UNIT OF H&L, EASTMAN KODAK COMPANY ROCHESTER, N.Y. AND WRITTEN STATUS REPORTS WERE SUBMITTED ON THE FOLLOWING DATES:

INSPECTION DATES	PHASE(S) INSPECTED	STATUS REPORT DATES
04/19/94	PROTOCOL APPENDIX SUBMISSION	
04/21/94	CLINICAL SIGNS AT 48 HRS.	05/09/94
05/09/94	FINAL REPORT REVIEW	05/09/94

COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

To the best of the signer's knowledge and belief, the study described by this report was conducted in compliance with the following Good Laboratory Practice Standards:

Annex 2 of the Organization for Economic Cooperation and Development Guidelines for Testing of Chemicals C(81)30 (Final).



Kenneth P. Shepard, B.S.
Study Director

May 12, 1994

Month/Day/Year

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ABSTRACT

3-NITRO-1,2-BENZENEDICARBONTRILE

ACUTE DERMAL IRRITATION STUDY IN THE RABBIT

HAEL NUMBER: 94-0028 KAN: 529340
CAS REGISTRY NUMBER: 51762-67-5

A dermal irritation study was conducted by administering single topical doses of 0.5 gram of the test material to rabbits. The test material was left in contact with the skin under an occlusive wrap for four hours. No signs of irritation were evident at any time during the 72-hour observation period. Based on the lack of an irritant response, the test material requires no skin irritation classification as defined in the 18th Adaptation on the EC Classification, Packaging, and Labelling of Dangerous Substances.

PERFORMING LABORATORY

Toxicological Sciences Laboratory
Corporate Health and Environment Laboratories
Eastman Kodak Company
1100 Ridgeway Avenue
B-320 Kodak Park
Rochester, New York 14652-6272
USA

SPONSOR

Eastman Kodak Company

STUDY DATES

Study Initiation: April 19, 1994
Experiment Initiation: April 19, 1994
Experiment Completion: April 22, 1994
Study Completion: May 12, 1994

STUDY DIRECTOR

Kenneth P. Shepard, B.S.

OTHER KEY PERSONNEL

Len Sakal, B.S., Study Technician
John W. Mosher, B.S., Principal Investigator
Milan S. Vlaovic, D.V.M., Ph.D., Laboratory Animal Medicine

PURPOSE/OBJECTIVE

The purpose of the study was to determine the potential of the test material to cause primary irritation of mammalian skin.

TEST SUBSTANCE

Test Material Name: 3-Nitro-1,2-benzenedicarbonitrile
CAS Registry Number: 51762-67-5
HAEL Laboratory Number: 94-0028
KAN: 529340
SRID or Lot I.D. Number: AA6274-48
Physical State and Appearance: off-white solid
Received at Performing Laboratory: April 7, 1994
Composition: Refer to composition information included in the notification when applicable.

TEST SYSTEM

Species: Rabbit
Strain: Hra:(NZW)SPF
Source: Hazleton Research Laboratories, Denver, PA, USA
No. of Animals: 3
Sex: Not Determined
Body Weight Range at Dosing (grams): 2987-3450
Age: Young Adults (At least three months old)

HUSBANDRY AND ENVIRONMENTAL CONDITIONS

Housing

All animals were individually housed in suspended, stainless-steel, mesh cages.

HUSBANDRY AND ENVIRONMENTAL CONDITIONS, Cont.

Environmental Conditions

A photoperiod of 12 hours light from 6 a.m. to 6 p.m. was maintained. Room temperature was maintained at 65-67 °F. Relative humidity was maintained at 64-68%.

Diet and Water

Agway® Prolab™ High Fiber Rabbit Diet certified pellets and water (Monroe County (NY) Water Authority) were available ad libitum. No known contaminants which would interfere with the outcome of the study were expected to be present in feed or water from these sources. Analyses of feed and quarterly analyses of water are maintained on file within the testing laboratory.

Isolation

Rabbits were isolated and monitored for at least five days after arrival and before release to the testing facility.

Animal Identification

All rabbits were identified by cage numbers and uniquely-numbered, metal ear tags.

TEST PROCEDURES AND CONDITIONS

Test Procedure Guideline

OECD Guideline for Testing of Chemicals: Guideline 404, Dated 17 July, 1992; (Annex V, test B.4).

Dose Level

0.5 gram/animal

TEST PROCEDURES AND CONDITIONS, Cont.

Identification Numbers of Animals Used

7, 8, and 9

Dosing Regimen

The hair was removed from an area of the dorsal skin with an electric clipper. A single dose of the material was placed in contact with the skin using a fiber pad and an occlusive wrap to hold the test material in place for four hours. At the end of the exposure period, the application site was rinsed with running water.

Control Substance

No control substance was used. Adjacent areas of untreated skin of each animal served as control sites for the test areas.

Vehicle

No vehicle was used. The test material was administered as a solid moistened thoroughly with water.

Clinical Observations

The site of application was examined at 1, 24, 48, and 72 hours after removal of the occlusive patch. Observations included estimation of erythema, edema, necrosis, eschar formation, scarring, erosion, and staining caused by the material as well as general systemic effects.

Necropsy

No necropsies were conducted at the conclusion of the 72-hour observation period.

RESULTS

Clinical Observations

Graded as described in OECD Guideline 404 (Annex V test B.4) (erythema, edema) .

ANIMAL NUMBER	DOSE (gram)	RESPONSE AT THE SITE OF APPLICATION			
		1 HOUR	24 HOURS	48 HOURS	72 HOURS
7	0.5	0,0	0,0	0,0	0,0
8	0.5	0,0	0,0	0,0	0,0
9	0.5	0,0	0,0	0,0	0,0

Description of Serious Lesions and Irritation Other Than Erythema and Edema

No irritant response or serious lesion was noted during the 72-hour observation period.

Toxic Effects Other Than Irritation

No toxic effects were noted during the study.

DATA ANALYSIS

Not applicable

DISCUSSION AND INTERPRETATION

Since no signs of irritation were evident at any time during the study, the test material was not considered a dermal irritant.

CONCLUSION

Based on the lack of an irritant response, the test material requires no skin irritation classification as defined in the 18th Adaptation on the EC Classification, Packaging, and Labelling of Dangerous Substances.

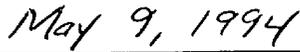
DATA STORAGE

All test results presented in this report are supported by raw data which are maintained in the archives of the Corporate Health and Environment Laboratories, Eastman Kodak Company.

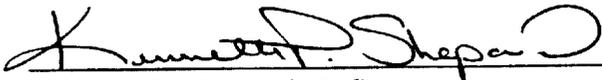
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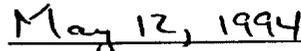
Len Sakal, B.S.
Report Author



Month/Day/Year



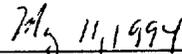
Kenneth P. Shepard, B.S.
Study Director



Month/Day/Year



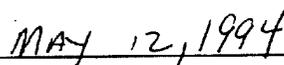
Douglas C. Topping, Ph.D.
Unit Director, Mammalian Toxicology Section



Month/Day/Year



John L. O'Donoghue, V.M.D., Ph.D.
Director, Corporate Health and Environment Laboratories



Month/Day/Year

STUDY TITLE

**3-NITRO-1,2-BENZENEDICARBONITRILE
ACUTE ORAL TOXICITY STUDY IN THE RAT**

**HAEL NUMBER: 94-0028 KAN: 529340
CAS REGISTRY NUMBER: 51762-67-5**

FINAL REPORT

AUTHOR

Kenneth P. Shepard, B.S.

PERFORMING LABORATORY

Toxicological Sciences Laboratory
Corporate Health and Environment Laboratories
Eastman Kodak Company
1100 Ridgeway Avenue
B-320 Kodak Park
Rochester, New York 14652-6272
USA

LABORATORY PROJECT ID

HAEL Number: 94-0028

STUDY SPONSOR

Eastman Kodak Company

STUDY COMPLETION DATE

November 17, 1994

QUALITY ASSURANCE INSPECTION STATEMENT

[21 CFR 58.35(B)(7), 40 CFR 792.35(B)(7), and 40 CFR 160.35(B)(7)]

STUDY: 94-0028-1 STUDY DIRECTOR: SHEPARD, K.P.
ACCESSION NUMBER: 529340

PAGE 1
11/08/94

STUDY TYPE: ACUTE ORAL TOXICITY

M. S. James
(AUDITOR, QUALITY ASSURANCE UNIT)

11/8/94
DATE

TO THE BEST OF MY KNOWLEDGE, THIS FINAL REPORT ACCURATELY DESCRIBES THE METHODS AND STANDARD OPERATING PROCEDURES, AND THE REPORTED RESULTS ACCURATELY REFLECT THE RAW DATA. THIS STUDY WAS INSPECTED BY 1 OR MORE PERSONS OF THE QUALITY ASSURANCE UNIT OF Hael, Eastman Kodak Company Rochester, N.Y. AND WRITTEN STATUS REPORTS WERE SUBMITTED ON THE FOLLOWING DATES:

INSPECTION DATES	PHASE(S) INSPECTED	STATUS REPORT DATES
-----	-----	-----
04/13/94	PROTOCOL APPENDIX/AMENDMENT SUBMISSION	
04/14/94	CLINICAL SIGNS AT 24 HRS.	
04/27/94	PROTOCOL APPENDIX/AMENDMENT SUBMISSION TEST ARTICLE-CARRIER-MIXTURE DOSING OF TEST SYSTEMS CLINICAL SIGNS-IMMEDIATE RESPONSE REPEAT - LOWER DOSES	11/08/94
06/15/94	GROSS PATHOLOGY PATHOLOGY REPORT	06/15/94
11/08/94	FINAL REPORT REVIEW	11/08/94

COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

The study described by this report was conducted in compliance with the following Good Laboratory Practice Standards:

Annex 2 of the Organization for Economic Cooperation and Development
Guidelines for Testing of Chemicals C(81)30 (Final).



Kenneth P. Shepard, B.S.
Study Director

11 / 17 / 94

Month/Day/Year

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ABSTRACT

3-NITRO-1,2-BENZENEDICARBONITRILE

ACUTE ORAL TOXICITY STUDY IN THE RAT

**HAEL NUMBER: 94-0028 KAN: 529340
CAS REGISTRY NUMBER: 51762-67-5**

An acute oral toxicity study was conducted in rats with the test material administered by gavage. Initially, a single oral dose of 2000 mg/kg of the test material was administered to a group of five males and five females. Two of the males and all females died after exposure to the test material. Therefore, two additional dose groups of five females each were added to the study. Each animal was administered either a single oral dose of 1000 or 500 mg/kg of the test material. No other mortality was observed during the study.

Discolored (bright yellow) urine was noted from all animals at all dose levels. Severe weakness, prostration, and hypothermia were observed only in a limited number of the animals which died after exposure to the test material. Additional treatment-related observations noted during the study included slight to moderate weakness, diarrhea, a reduced amount of feces, staining (yellow) of the inguinal hair and skin of the tail and/or feet, fecal staining of the inguinal hair, porphyrin staining of the hair of the face and/or forelimbs, piloerection, urine stains on the inguinal hair, and dehydration.

Treatment-related changes noted at necropsy included hemorrhage and necrosis in the glandular gastric mucosa which provided evidence that the test material was a gastric irritant. No other significant gross organ lesions were noted at necropsy, and no tissue was collected for histological examination. The cause of death for animals which died after exposure to the test material was not determined.

Based on mortality rates, the oral LD₅₀ for female rats was calculated to be 1414 mg/kg. The pattern of deaths for the male rats did not lend itself to a direct calculation of the LD₅₀. Since only two of five males died at 2000 mg/kg, the oral LD₅₀ for male rats was greater than 2000 mg/kg. Based on the calculated LD₅₀ value (LD₅₀ greater than 1641 mg/kg), using the data for both sexes, the test material was classified as slightly toxic in rats according to the criteria set forth by Hodge and Sterner (1949) and classified as harmful if swallowed as defined in the 18th Adaptation on the EC Classification, Packaging, and Labelling of Dangerous Substances.

PERFORMING LABORATORY

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USA

SPONSOR

Eastman Kodak Company

STUDY DATES

Study Initiation: April 13, 1994
Experiment Initiation: April 13, 1994
Experiment Completion: June 21, 1994
Study Completion: November 17, 1994

STUDY DIRECTOR

Kenneth P. Shepard, B.S.

OTHER KEY PERSONNEL

Leonard Sakal, B.S., Study Technician
John W. Mosher, B.S., Principal Investigator
Milan S. Vlaovic, D.V.M., Ph.D., Pathologist, Laboratory Animal Medicine

HUSBANDRY AND ENVIRONMENTAL CONDITIONS, Cont.

Environmental Conditions

A photoperiod of 12 hours light from 6 a.m. to 6 p.m. was maintained. Room temperature was maintained at 67-73 °F. Relative humidity was maintained at 52-66%.

Diet and Water

Agway® Prolab™ Animal Diet - RMH 3000 (certified) pellets and water (Monroe County (NY) Water Authority) were available ad libitum. No known contaminants which would interfere with the outcome of the study were expected to be present in feed or water from these sources. Analyses of feed and results of quarterly analyses of water are maintained on file within the testing laboratory.

Isolation

Animals were isolated and monitored for at least five days after arrival and before release to the testing facility.

Animal Identification

All animals were identified by cage numbers and uniquely-numbered, metal ear tags.

TEST PROCEDURES AND CONDITIONS

Test Procedure Guideline

OECD Guideline for Testing of Chemicals: Guideline 401 (Annex V, test B.1).

Randomization

A clinical examination was performed on each animal to ensure that only healthy animals were utilized. The procedure for including animals in the study was to randomly select and assign animals from the same shipment to the study. Randomization was done by computer-generated lists using the Automated Animal Toxicology System. After assignment of animals to the study, the body weights were determined to ensure that individual body weights did not exceed 20% of the mean weight for each sex.

TEST PROCEDURES AND CONDITIONS, Cont.

Identification Numbers of Animals Used

<u>Dose levels</u>	<u>Males</u>	<u>Females</u>
500 mg/kg	-----	881-885
1000 mg/kg	-----	886-890
2000 mg/kg	841-845	846-850

Dose Levels .

Single doses of 2000 mg/kg were administered to five males and five females. In addition, single doses of 1000 or 500 mg/kg were administered to two groups of five females. Variability in test volumes was minimized by adjusting the concentration to ensure a constant volume at all dose levels.

Dosing Regimen

The test material was administered by gavage as 5, 10, or 20% solutions in the vehicle to animals that had been fasted overnight.

Vehicle and Control Substance

The vehicle was a 0.5% aqueous suspension of guar gum (Jaguar®), Control Number: F-10-88-592-10. No control substance was used.

Clinical Observations

Animals were observed three times on the day of dosing (Day 0), and once each day thereafter for the duration of the experiment. Observations included, but were not limited to, changes in the skin; fur; feces; urine; eyes; mucous membranes; respiratory, circulatory, autonomic, and central nervous systems; somatomotor activity; and behavior pattern.

Body Weight Determinations

Body weights were collected on Days 0 (prior to treatment), 7, and 14.

TEST PROCEDURES AND CONDITIONS, Cont.

Necropsy

Animals that died during the study were necropsied as soon as possible. Surviving animals were necropsied at the completion of the 14-day observation period.

RESULTS

Initially, a limit dose of 2000 mg/kg was administered to a group of five male and five female rats. Based on the mortality rate for female rats at the limit dose, additional dose levels of 500 and 1000 mg/kg, administered to females only, were added to the study.

Mortality

For male rats, mortality was 40% at 2000 mg/kg. For the females, mortality was 0% at 500 mg/kg, 0% at 1000 mg/kg, and 100% at 2000 mg/kg.

MORTALITY TABLE

DOSE (mg/kg)	NUMBER OF RATS EXPOSED (Male, Female)	NUMBER OF DEATHS (Male, Female)	TIME OF DEATH
500	0,5	--,0	-----
1000	0,5	--,0	-----
2000	5,5	2,5	Day 1 to Day 4

RESULTS. Cont.

Clinical Observations

For the five females at the 500 mg/kg dose level (Rats 881-885), discolored (bright yellow) urine was noted on the day of administration of the test material. With the exception of a single female (Rat 882) which appeared normal on Day 3 of the study, the discolored urine persisted to Day 5. On the day following dosing, staining (yellow) of the inguinal hair and the skin of the tail was evident for a single female (Rat 881). The staining was still present at termination of the study. The only other abnormal clinical sign noted at this dose level was a reduced amount of feces for Rat 884 noted on Day 3 of the study. All females at this dose level gained weight and survived to termination of the study.

For the five females at the 1000 mg/kg dose level (Rats 886-890), abnormal clinical signs noted on the day of dosing were limited to discolored (bright yellow) urine. The discolored urine persisted to Day 6 for all females. On the day following dosing, staining (yellow) of the inguinal hair and the skin of the tail was evident for a single female (Rat 889). Staining of the inguinal hair and the skin of the tail were also evident for an additional female (Rat 888) on Day 2 of the study. The staining observed for both females (Rats 888 and 889) was still present at termination of the study. Other abnormal clinical signs noted for this dose level included staining (yellow) of the skin of the feet on Days 2, 3, 4, and 5 (Rat 888) and Days 2 and 3 (Rat 889); a reduced amount of feces on Day 3 (Rats 888, 889, and 890); and porphyrin staining of the hair of the face and hair of the forelimbs on Day 3 (Rat 888); and urine staining of the inguinal hair on Day 3 (Rat 888). All females at this dose level gained weight and survived to termination of the study.

At a dose level of 2000 mg/kg, diarrhea and discolored (bright yellow) urine were noted for all males (Rats 841-845) and females (Rats 846-850) on the day of dosing. Diarrhea was again noted for all surviving male rats on Day 3 (Rats 842-845), for two of three males (Rats 843 and 844) on Day 4, and for all remaining males (Rats 843-845) on Day 5 of the study. A reduced amount of feces initially observed on the day following dosing for all surviving animals (Rats 842-845 and 846-847) and the discolored urine that was noted on Day 0 persisted to Day 6 of the study or until death for the animals which died. Staining (yellow) of the inguinal hair and the skin of the tail and/or feet was evident for all remaining animals on the day following dosing. Staining of the inguinal hair and the skin of the tail persisted to death or termination of the observation period. Staining of the feet persisted to death or Day 8 of the study. Fecal staining of the inguinal hair was noted for only males and was observed on Days 1 and 2 for a single male (Rat 844), on Day 3 for three males (Rats 842, 843, and 844), and on Days 4, 5, and 6 for two males (Rats 843 and 844). By Day 2 of the study,

RESULTS, Cont.

Clinical Observations, Cont.

weakness was noted for all surviving animals. With the exception of severe weakness noted on the day prior to death for Rat 842, slight weakness was evident for all surviving males on Days 2, 3, 4, and 6. Moderate weakness was observed for all surviving males on Day 5. For the two surviving females, slight weakness was noted for Rat 847 and moderate weakness was noted for Rat 846 on Day 2. Additional observations seen during the study at this dose level included hypothermia on the day prior to death for a single male (Rat 842) and female (Rat 847), piloerection for all surviving males (Rats 843-845) on Day 5, and dehydration for all surviving males on Days 3-6 of the study. Porphyrin staining of the hair of the face was also noted for a single male on Day 2 (Rat 842), Day 3 (Rat 842), and Day 4 (Rat 844) and for a single female on Day 2 (Rat 846) and Day 3 (Rat 847).

Body Weights

All three male rats at the 2000 mg/kg dose level which survived to termination of the study lost weight (3-12 grams) during the first week of the study but gained weight during the second week of the study. A weight gain (82-85 grams) was recorded for these three males over the two week period of the study. No females at the 2000 mg/kg dose level survived the first week of the study. For the females at the 500 and 1000 mg/kg dose levels, all animals gained weight during both weeks of the study.

Individual Body Weights

TABLE OF INDIVIDUAL BODY WEIGHTS - MALES

DOSE (mg/kg)	ANIMAL NUMBER	INDIVIDUAL BODY WEIGHTS (grams)		
		DAY 0	DAY 7	DAY 14 or (Terminal)
2000	841	148	Died Day 1	(148)
2000	842	156	Died Day 4	(130)
2000	843	155	146	237
2000	844	145	142	228
2000	845	151	139	236

RESULTS, Cont.

Individual Body Weights, Cont.

TABLE OF INDIVIDUAL BODY WEIGHTS - FEMALES

DOSE (mg/kg)	ANIMAL NUMBER	INDIVIDUAL BODY WEIGHTS (grams)		
		DAY 0	DAY 7	DAY 14 or (Terminal)
500	881	154	219	252
500	882	146	206	236
500	883	153	207	233
500	884	148	193	216
500	885	137	180	206
1000	886	144	194	211
1000	887	140	191	222
1000	888	148	177	211
1000	889	149	190	227
1000	890	146	198	233
2000	846	142	Died Day 2	(130)
2000	847	153	Died Day 4	(137)
2000	848	149	Died Day 1	(148)
2000	849	149	Died Day 1	(148)
2000	850	158	Died Day 1	(165)

RESULTS, Cont.

Necropsy and Histopathology Findings

Treatment-related changes noted at necropsy included hemorrhage and necrosis in the glandular gastric mucosa; these effects are evidence that the test material was a gastric irritant. No other significant gross organ lesions were noted at necropsy, and no tissue was collected for histological examination. The cause of death for animals which died after exposure to the test material was not determined. A detailed record of the incidence and severity of all gross abnormalities and microscopic findings are presented in computer-generated tables which are included in the appended pathology report.

DATA ANALYSIS

The LD₅₀ was obtained using the method of Weib (1952). The results were as follows:

LD ₅₀ for male rats *:	> 2000 mg/kg	(95% C.I. = No Range Calculable)
LD ₅₀ for female rats:	1414 mg/kg	(95% C.I. = 1072 - 1866 mg/kg)
LD ₅₀ for both sexes combined:	> 1641 mg/kg	(95% C.I. = 1131 - 2379 mg/kg)

* The pattern of deaths for the male rats did not lend itself to a direct calculation of the LD₅₀. Since two of five males died at 2000 mg/kg, the oral LD₅₀ for male rats was greater than 2000 mg/kg.

No dose/mortality curve was constructed since graphs become statistically useful only with the use of large numbers of animals and dose groups.

DISCUSSION AND INTERPRETATION

Based on mortality rates, the oral LD₅₀ for female rats was calculated to be 1414 mg/kg. The pattern of deaths for the male rats did not lend itself to a direct calculation of the LD₅₀. Since only two of five males died at 2000 mg/kg, the oral LD₅₀ for male rats was greater than 2000 mg/kg. Using the data for both sexes, the calculated LD₅₀ value for the combined sexes was greater than 1641 mg/kg.

CONCLUSION

Based on the calculated LD₅₀ for the combined sexes, the test material was classified as slightly toxic in rats according to the criteria set forth by Hodge and Sterner (1949) and classified as harmful if swallowed as defined in the 18th Adaptation on the EC Classification, Packaging, and Labelling of Dangerous Substances. The cause of death for rats which died after exposure to the test material was not determined. As a result of the necropsy findings, the test material was determined to be a gastric irritant.

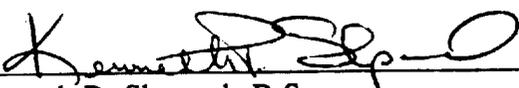
DATA STORAGE

All test results presented in this report are supported by raw data which are maintained in the archives of the Corporate Health and Environment Laboratories, Eastman Kodak Company.

REFERENCES

- Hodge, H.C. and Sterner, J.H. (1949). Tabulation of toxicity classes. *Am. Indust. Hyg. Quart.*, 10:93-96.
- Weil, C.S. (1952). Tables of convenient calculations of medium-effective dose (LD₅₀ or ED₅₀) and instructions in their use. *Biometrics*, 8:249-263.

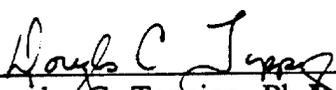
SIGNATURE PAGE



Kenneth P. Shepard, B.S.
Study Director

11/17/94

Month/Day/Year



Douglas C. Topping, Ph.D.
Unit Director, Mammalian Toxicology Section

Nov 10, 1994

Month/Day/Year



John L. O'Donoghue, V.M.D., Ph.D.
Director, Corporate Health and Environment Laboratories

11/16/94

Month/Day/Year

APPENDIX

Study No. 94-0028
Acc. No. 529340

PATHOLOGY REPORT

Compound: 3-Nitro-1,2-benzenedicarbonitrile

Male rats given 2000 mg/kg and female rats given 2000, 1000, or 500 mg/kg of the test material by gavage, as part of an acute oral toxicity study, were necropsied. Necropsy lesions are listed in computer-generated tables.

The cause of death for rats, which died after exposure to the test material, was not determined.

GROSS PATHOLOGY

Male Rats - 2000 mg/kg dose group: Treatment-related changes in a single rat, which died on Day 1, included test article in the stomach, duodenum, jejunum, and ileum. Treatment-related changes in a single rat, which died on Day 4, and the remaining three rats, which survived the 14-day observation period, included minimal to minor yellow discoloration of the tail (4/4), feet (1/4), and inguinal hair (4/4) by the test material. In addition, the hair of the face (1/4) showed a minor porphyrin staining, and a brown fecal stain (1/4) was observed on the inguinal hair. The carcass of a single rat showed moderate autolysis. No signs of organ toxicity were observed.

Female Rats - 2000 mg/kg dose group: Treatment-related changes in three rats which, died on Day 1, included test article in the stomach (3/3), duodenum (2/3), jejunum (1/3), and ileum (1/3). Treatment-related changes in single rats which died on Days 2 or 4 included moderate necrosis (1/2) and minor hemorrhage (1/2) in the glandular gastric mucosa, and distention of the duodenum (1/2), jejunum (1/2), and ileum (1/2) with fluid. In addition, the skin of the tail (2/2) and feet (2/2) showed minor yellow discoloration by the test material. The hair of the face showed minimal to minor porphyrin stain (2/2), and the inguinal hair showed minor yellow discoloration (2/2) by the test material. The carcass of a single rat showed moderate autolysis.

Female Rats - 1000 mg/kg dose group: Treatment-related changes included minimal discoloration of the skin of the tail (2/5) and inguinal hair (2/5) by the test material. All rats survived the 14-day observation period. No signs of organ toxicity were observed.

Female Rats - 500 mg/kg dose group: Treatment-related changes included minimal yellow discoloration of the skin of the feet (1/5) and inguinal hair (1/5) by the test material. All rats survived the 14-day observation period. No signs of organ toxicity were observed.

All other lesions listed in the attached tables were not considered treatment-related.

In the absence of significant gross organ lesions, other than the obvious signs of gastric irritation, no tissue was collected for microscopic examination.

Comments: The test material was a gastric irritant as evidenced by the hemorrhage and necrosis in the glandular gastric mucosa.

 6/21/94

Milan S. Vlaovic, D.V.M., Ph.D.

 6/21/94

Reviewed by
John L. O'Donoghue, V.M.D., Ph.D.

MSV:sji
06/15/94

SUMMARY GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

GROUP	500.000	1000.000	2000.000
	MG/KG M	MG/KG M	MG/KG M
TRACHEA	0	0	5
LUNGS	0	0	5
THYMUS	0	0	5
HEART	0	0	5
ESOPHAGUS	0	0	5
STOMACH	0	0	5
STOMACH CONTENTS--TEST ARTICLE PRESENT	0	0	1
DUODENUM	0	0	5
INTESTINAL CONTENTS--TEST ARTICLE PRESENT	0	0	1
JEJUNUM	0	0	5
INTESTINAL CONTENTS--TEST ARTICLE PRESENT	0	0	1
ILEUM	0	0	5
INTESTINAL CONTENTS--TEST ARTICLE PRESENT	0	0	1
CECUM	0	0	5
COLON	0	0	5
RECTUM	0	0	5
LIVER	0	0	5
KIDNEYS	0	0	5
URINARY BLADDER	0	0	5
PITUITARY GLAND	0	0	5
ADRENALS	0	0	5
PANCREAS, NOS	0	0	5
THYROID GLANDS	0	0	5
PARATHYROID GLANDS	0	0	5
SPLEEN	0	0	5
MESENTERIC LYMPH NODES	0	0	5
BONE MARROW	0	0	5
BRAIN	0	0	5
EYES	0	0	5
SALIVARY GLANDS	0	0	5
ADIPOSE TISSUE	0	0	5

NUMBERS REPRESENT NUMBER OF TISSUES EXAMINED, OR IN THE CASE OF ABNORMAL FINDINGS,
THE NUMBER OF TISSUES WITH EACH ABNORMALITY

REVIEWED BY: John M. Oster DATE: 6-13-94 ACCEPTED BY: Laura J. Veam DATE: 6/14/94

SUMMARY GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

GROUP	500.000	1000.000	2000.000
	MG/KG M	MG/KG M	MG/KG M
SKIN, NOS	0	0	5
SKIN OF TAIL			
DISCOLORATION, YELLOW	0	0	4
SKIN OF FOOT AND TOE			
DISCOLORATION, YELLOW	0	0	1
HAIR	0	0	5
HAIR OF INGUINAL REGION			
DISCOLORATION, YELLOW	0	0	4
DISCOLORATION, BROWN	0	0	1
HAIR OF FACE			
DISCOLORATION, RED	0	0	1
ACCESSORY SEX ORGANS (MALE)	0	0	5
EPIDIDYMIDES	0	0	5
TESTES	0	0	5
BODY AS A WHOLE, NOS	0	0	1
AUTOLYSIS	0	0	1

NUMBERS REPRESENT NUMBER OF TISSUES EXAMINED, OR IN THE CASE OF ABNORMAL FINDINGS, THE NUMBER OF TISSUES WITH EACH ABNORMALITY

REVIEWED BY: John M. Lenz DATE: 6-13-44 ACCEPTED BY: Anton J. Kasari DATE: 6/14/44

INDIVIDUAL ANIMAL GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

ANIMAL #	2000.000 MG/KG				
	GROUP - M				
	841	842	843	844	845
DAYS ON TEST	1	4	14	14	14
TRACHEA	X	X	X	X	X
LUNGS	X	X	X	X	X
THYMUS	X	X	X	X	X
HEART	X	X	X	X	X
ESOPHAGUS	X	X	X	X	X
STOMACH		X	X	X	X
STOMACH CONTENTS-TEST ARTICLE PRESENT	P				
DUODENUM		X	X	X	X
INTESTINAL CONTENTS-TEST ARTICLE PRESENT	P				
JEJUNUM		X	X	X	X
INTESTINAL CONTENTS-TEST ARTICLE PRESENT	P				
ILEUM		X	X	X	X
INTESTINAL CONTENTS-TEST ARTICLE PRESENT	P				
CECUM	X	X	X	X	X
COLON	X	X	X	X	X
RECTUM	X	X	X	X	X
LIVER	X	X	X	X	X
KIDNEYS	X	X	X	X	X
URINARY BLADDER	X	X	X	X	X
PITUITARY GLAND	X	X	X	X	X
ADRENALS	X	X	X	X	X
PANCREAS, NOS	X	X	X	X	X
THYROID GLANDS	X	X	X	X	X
PARATHYROID GLANDS	X	X	X	X	X
SPLEEN	X	X	X	X	X
MESENTERIC LYMPH NODES	X	X	X	X	X
BONE MARROW	X	X	X	X	X
BRAIN	X	X	X	X	X
EYES	X	X	X	X	X
SALIVARY GLANDS	X	X	X	X	X
ADIPOSE TISSUE	X	X	X	X	X
*SKIN, NOS	X				
SKIN OF TAIL					
DISCOLORATION, YELLOW		2	1	1	1
SKIN OF FOOT AND TOE					
DISCOLORATION, YELLOW		2			
*HAIR	X				
HAIR OF INGUINAL REGION					
DISCOLORATION, YELLOW		2	1	1	1
DISCOLORATION, BROWN		2			
HAIR OF FACE					
DISCOLORATION, RED		2			
ACCESSORY SEX ORGANS (MALE)	X	X	X	X	X
EPIDIDYMIDES	X	X	X	X	X

KEY: N-NORMAL AND TISSUE COLLECTED FOR HISTOPATHOLOGY, 1-MINIMAL, 2-MINOR, 3-MODERATE, 4-SEVERE
P-PRESENT, A-ABSENT, *-SEE COMMENT REPORT (FORM #2), X-NORMAL BUT NOT COLLECTED

REVIEWED BY: Joh Moker DATE: 6-13-94 ACCEPTED BY: Anton J. Veen DATE: 6/14/94

INDIVIDUAL ANIMAL GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
 SOFTWARE VERS # 3.0
 ACCESSION NUMBER 529340

ANIMAL #	2000.000 MG/KG					GROUP - M
	841	842	843	844	845	
DAYS ON TEST	1	4	14	14	14	
TESTES	X	X	X	X	X	
BODY AS A WHOLE, NOS AUTOLYSIS			3			

KEY: N-NORMAL AND TISSUE COLLECTED FOR HISTOPATHOLOGY, 1-MINIMAL, 2-MINOR, 3-MODERATE, 4-SEVERE
 P-PRESENT, A-ABSENT, *--SEE COMMENT REPORT (FORM #2), X-NORMAL BUT NOT COLLECTED

REVIEWED BY: John Morken DATE: 6-13-94 ACCEPTED BY: Stanley Vlasov DATE: 6/19/94

SUMMARY GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

GROUP	500.000	1000.000	2000.000
	MG/KG F	MG/KG F	MG/KG F
TRACHEA	5	5	5
LUNGS	5	5	5
THYMUS	5	5	5
HEMORRHAGE	0	0	1
HEART	5	5	5
ESOPHAGUS	5	5	5
STOMACH	5	5	5
STOMACH CONTENTS-TEST ARTICLE PRESENT	0	0	3
STOMACH, GLANDULAR			
NECROSIS	0	0	1
HEMORRHAGE	0	0	1
DUODENUM	5	5	5
INTESTINAL CONTENTS-TEST ARTICLE PRESENT	0	0	2
DISTENTION	0	0	1
JEJUNUM	5	5	5
INTESTINAL CONTENTS-TEST ARTICLE PRESENT	0	0	1
DISTENTION	0	0	1
ILEUM	5	5	5
INTESTINAL CONTENTS-TEST ARTICLE PRESENT	0	0	1
DISTENTION	0	0	1
CECUM	5	5	5
COLON	5	5	5
RECTUM	5	5	5
LIVER	5	5	5
KIDNEYS	5	5	5
URINARY BLADDER	5	5	5
PITUITARY GLAND	5	5	5
ADRENALS	5	5	5
PANCREAS, NOS	5	5	5
THYROID GLANDS	5	5	5
PARATHYROID GLANDS	5	5	5
SPLEEN	5	5	5
MESENTERIC LYMPH NODES	5	5	5
BONE MARROW	5	5	5
BRAIN	5	5	5
EYES	5	5	5

NUMBERS REPRESENT NUMBER OF TISSUES EXAMINED, OR IN THE CASE OF ABNORMAL FINDINGS,
THE NUMBER OF TISSUES WITH EACH ABNORMALITY

REVIEWED BY:

Joh. M. O'Brien

DATE: 6-13-74

ACCEPTED BY:

William A. Vroman

DATE:

6/14/74

SUMMARY GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

GROUP	500.000	1000.000	2000.000
	MG/KG F	MG/KG F	MG/KG F
SALIVARY GLANDS	5	5	5
ADIPOSE TISSUE	5	5	5
SKIN, NOS	5	5	5
SKIN OF TAIL DISCOLORATION, YELLOW	1	2	0
TAIL DISCOLORATION, YELLOW	0	0	2
SKIN OF FOOT AND TOE DISCOLORATION, YELLOW	0	0	2
HAIR	5	5	5
HAIR OF INGUINAL REGION DISCOLORATION, YELLOW	1	2	2
HAIR OF FACE DISCOLORATION, RED	0	0	2
FALLOPIAN TUBES	5	5	5
VAGINA	5	5	5
UTERUS	5	5	5
HYDROMETRA	0	2	0
OVARIES	5	5	5
CERVIX UTERI	5	5	5
BODY AS A WHOLE, NOS	0	0	1
AUTOLYSIS	0	0	1

NUMBERS REPRESENT NUMBER OF TISSUES EXAMINED, OR IN THE CASE OF ABNORMAL FINDINGS,
THE NUMBER OF TISSUES WITH EACH ABNORMALITY

REVIEWED BY: John Mester DATE: 6-13-44 ACCEPTED BY: Julian J. Ularow DATE: 6/14/44

INDIVIDUAL ANIMAL GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

ANIMAL #	500.000 MG/KG				
	GROUP - F				
	881	882	883	884	885
DAYS ON TEST	14	14	14	14	14
TRACHEA	X	X	X	X	X
LUNGS	X	X	X	X	X
THYMUS	X	X	X	X	X
HEART	X	X	X	X	X
ESOPHAGUS	X	X	X	X	X
STOMACH	X	X	X	X	X
DUODENUM	X	X	X	X	X
JEJUNUM	X	X	X	X	X
ILEUM	X	X	X	X	X
CECUM	X	X	X	X	X
COLON	X	X	X	X	X
RECTUM	X	X	X	X	X
LIVER	X	X	X	X	X
KIDNEYS	X	X	X	X	X
URINARY BLADDER	X	X	X	X	X
PITUITARY GLAND	X	X	X	X	X
ADRENALS	X	X	X	X	X
PANCREAS, NOS	X	X	X	X	X
THYROID GLANDS	X	X	X	X	X
PARATHYROID GLANDS	X	X	X	X	X
SPLEEN	X	X	X	X	X
MESENTERIC LYMPH NODES	X	X	X	X	X
BONE MARROW	X	X	X	X	X
BRAIN	X	X	X	X	X
EYES	X	X	X	X	X
SALIVARY GLANDS	X	X	X	X	X
ADIPOSE TISSUE	X	X	X	X	X
*SKIN, NOS		X	X	X	X
SKIN OF TAIL DISCOLORATION, YELLOW	1				
*HAIR		X	X	X	X
HAIR OF INGUINAL REGION DISCOLORATION, YELLOW	1				
FALLOPIAN TUBES	X	X	X	X	X
VAGINA	X	X	X	X	X
UTERUS	X	X	X	X	X
OVARIES	X	X	X	X	X
CERVIX UTERI	X	X	X	X	X

KEY: N-NORMAL AND TISSUE COLLECTED FOR HISTOPATHOLOGY, 1-MINIMAL, 2-MINOR, 3-MODERATE, 4-SEVERE
P-PRESENT, A-ABSENT, *--SEE COMMENT REPORT (FORM #2), X-NORMAL BUT NOT COLLECTED

REVIEWED BY: John Moker DATE: 6-13-94 ACCEPTED BY: Madison J. Vlaskin DATE: 6-14-94

INDIVIDUAL ANIMAL GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

ANIMAL #	1000.000 MG/KG GROUP - F				
	886	887	888	889	890
DAYS ON TEST	14	14	14	14	14
TRACHEA	X	X	X	X	X
LUNGS	X	X	X	X	X
THYMUS	X	X	X	X	X
HEART	X	X	X	X	X
ESOPHAGUS	X	X	X	X	X
STOMACH	X	X	X	X	X
DUODENUM	X	X	X	X	X
JEJUNUM	X	X	X	X	X
ILEUM	X	X	X	X	X
CECUM	X	X	X	X	X
COLON	X	X	X	X	X
RECTUM	X	X	X	X	X
LIVER	X	X	X	X	X
KIDNEYS	X	X	X	X	X
URINARY BLADDER	X	X	X	X	X
PITUITARY GLAND	X	X	X	X	X
ADRENALS	X	X	X	X	X
PANCREAS, NOS	X	X	X	X	X
THYROID GLANDS	X	X	X	X	X
PARATHYROID GLANDS	X	X	X	X	X
SPLEEN	X	X	X	X	X
MESENTERIC LYMPH NODES	X	X	X	X	X
BONE MARROW	X	X	X	X	X
BRAIN	X	X	X	X	X
EYES	X	X	X	X	X
SALIVARY GLANDS	X	X	X	X	X
ADIPOSE TISSUE	X	X	X	X	X
*SKIN, NOS	X	X			X
SKIN OF TAIL DISCOLORATION, YELLOW			1	1	
*HAIR	X	X			X
HAIR OF INGUINAL REGION DISCOLORATION, YELLOW			1	1	
FALLOPIAN TUBES	X	X	X	X	X
VAGINA	X	X	X	X	X
UTERUS HYDROMETRA	X	X	1	1	X
OVARIES	X	X	X	X	X
CERVIX UTERI	X	X	X	X	X

KEY: N-NORMAL AND TISSUE COLLECTED FOR HISTOPATHOLOGY, 1-MINIMAL, 2-MINOR, 3-MODERATE, 4-SEVERE
P-PRESENT, A-ABSENT, *--SEE COMMENT REPORT (FORM #2), X-NORMAL BUT NOT COLLECTED

REVIEWED BY:

Joh M. Oster

DATE: 6-13-94

ACCEPTED BY: *Walter J. Ucciani*

DATE: 6-14-94

INDIVIDUAL ANIMAL GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

ANIMAL #	2000.000 MG/KG					GROUP - F				
	846	847	848	849	850	846	847	848	849	850
DAYS ON TEST	2	4	1	1	1					
TRACHEA	X	X	X	X	X					
LUNGS	X	X	X	X	X					
THYMUS HEMORRHAGE	X	X	X		X				2	
HEART	X	X	X	X	X					
ESOPHAGUS	X	X	X	X	X					
STOMACH STOMACH CONTENTS-TEST ARTICLE PRESENT		X		P	P					
STOMACH, GLANDULAR NECROSIS	3									
HEMORRHAGE	2									
*DUODENUM INTESTINAL CONTENTS-TEST ARTICLE PRESENT			X		X					
DISTENTION	2		P		P					
*JEJUNUM INTESTINAL CONTENTS-TEST ARTICLE PRESENT			X	X	X					
DISTENTION	2				P					
*ILEUM INTESTINAL CONTENTS-TEST ARTICLE PRESENT			X	X	X					
DISTENTION	2				P					
CECUM	X	X	X	X	X					
COLON	X	X	X	X	X					
RECTUM	X	X	X	X	X					
LIVER	X	X	X	X	X					
KIDNEYS	X	X	X	X	X					
URINARY BLADDER	X	X	X	X	X					
PITUITARY GLAND	X	X	X	X	X					
ADRENALS	X	X	X	X	X					
PANCREAS, NOS	X	X	X	X	X					
THYROID GLANDS	X	X	X	X	X					
PARATHYROID GLANDS	X	X	X	X	X					
SPLEEN	X	X	X	X	X					
MESENTERIC LYMPH NODES	X	X	X	X	X					
BONE MARROW	X	X	X	X	X					
BRAIN	X	X	X	X	X					
EYES	X	X	X	X	X					
SALIVARY GLANDS	X	X	X	X	X					
ADIPOSE TISSUE	X	X	X	X	X					
*SKIN, NOS				X	X					
TAIL DISCOLORATION, YELLOW	2	2								
SKIN OF FOOT AND TOE DISCOLORATION, YELLOW	2	2								

KEY: N-NORMAL AND TISSUE COLLECTED FOR HISTOPATHOLOGY, 1-MINIMAL, 2-MINOR, 3-MODERATE, 4-SEVERE
P-PRESENT, A-ABSENT, *--SEE COMMENT REPORT (FORM #2), X-NORMAL BUT NOT COLLECTED

REVIEWED BY:

John Mosher

DATE: 6-13-94

ACCEPTED BY:

Julian A. Vlasov

DATE: 6-14-94

INDIVIDUAL ANIMAL GROSS PATHOLOGY INCIDENCE TABLE

EXPERIMENT # 940028A0

COMPOUND # 94-0028
 SOFTWARE VERS # 3.0
 ACCESSION NUMBER 529340

ANIMAL #	2000.000 MG/KG					GROUP - F				
	846	847	848	849	850	846	847	848	849	850
DAYS ON TEST	2	4	1	1	1					
•HAIR						X	X	X	X	X
HAIR OF FACE DISCOLORATION, RED	2	1								
HAIR OF INGUINAL REGION DISCOLORATION, YELLOW	2	2								
FALLOPIAN TUBES	X	X	X	X	X					
VAGINA	X	X	X	X	X					
UTERUS	X	X	X	X	X					
OVARIES	X	X	X	X	X					
CERVIX UTERI	X	X	X	X	X					
BODY AS A WHOLE, NOS AUTOLYSIS		3								

KEY: N-NORMAL AND TISSUE COLLECTED FOR HISTOPATHOLOGY, 1-MINIMAL, 2-MINOR, 3-MODERATE, 4-SEVERE
 P-PRESENT, A-ABSENT, *--SEE COMMENT REPORT (FORM #2), X-NORMAL BUT NOT COLLECTED

REVIEWED BY: John M. Molen DATE: 6-13-74 ACCEPTED BY: Simon A. Vlaschi DATE: 6/14/74

GROSS PATHOLOGY COMMENT REPORT

EXPERIMENT # 940028A0

COMPOUND # 94-0028
SOFTWARE VERS # 3.0
ACCESSION NUMBER 529340

DAY	DOSE LEVEL	ANIMAL #	COMMENT
35	500.000 MG/KG	881	HAIR OF INGUINAL REGION: STAINED YELLOW.
35	500.000 MG/KG	881	SKIN OF TAIL: STAINED YELLOW.
35	1000.000 MG/KG	888	HAIR OF INGUINAL REGION: STAINED YELLOW.
35	1000.000 MG/KG	888	SKIN OF TAIL: YELLOW STAIN.
35	1000.000 MG/KG	889	HAIR OF INGUINAL REGION: STAINED YELLOW.
35	1000.000 MG/KG	889	SKIN OF TAIL: STAINED YELLOW.
35	2000.000 MG/KG	846	HAIR OF FACE: PORPHYRIN STAIN.
35	2000.000 MG/KG	846	HAIR OF INGUINAL REGION: STAINED YELLOW.
35	2000.000 MG/KG	846	SKIN OF TAIL: STAINED YELLOW.
35	2000.000 MG/KG	846	SKIN OF FOOT AND TOE: FEET WERE STAINED YELLOW.
35	2000.000 MG/KG	846	DUODENUM: DISTENDED WITH FLUID.
35	2000.000 MG/KG	846	JEJUNUM: DISTENDED WITH FLUID.
35	2000.000 MG/KG	846	ILEUM: DISTENDED WITH FLUID.
35	2000.000 MG/KG	847	HAIR OF FACE: PORPHYRIN STAIN.
35	2000.000 MG/KG	847	SKIN OF FOOT AND TOE: FEET WERE STAINED YELLOW.
35	2000.000 MG/KG	847	SKIN OF TAIL: STAINED YELLOW.
35	2000.000 MG/KG	847	HAIR OF INGUINAL REGION: STAINED YELLOW.
35	2000.000 MG/KG	842	HAIR OF FACE: PORPHYRIN STAIN.
35	2000.000 MG/KG	842	HAIR OF INGUINAL REGION: STAINED YELLOW.
35	2000.000 MG/KG	842	HAIR OF INGUINAL REGION: FECAL STAIN PRESENT.
35	2000.000 MG/KG	842	SKIN OF FOOT AND TOE: FEET WERE STAINED YELLOW.
35	2000.000 MG/KG	842	SKIN OF TAIL: STAINED YELLOW.
49	2000.000 MG/KG	843	SKIN OF TAIL: STAINED YELLOW.
49	2000.000 MG/KG	843	HAIR OF INGUINAL REGION: STAINED YELLOW.
49	2000.000 MG/KG	844	SKIN OF TAIL: STAINED YELLOW.
49	2000.000 MG/KG	844	HAIR OF INGUINAL REGION: STAINED YELLOW.
49	2000.000 MG/KG	845	SKIN OF TAIL: STAINED YELLOW.
49	2000.000 MG/KG	845	HAIR OF INGUINAL REGION: STAINED YELLOW.

REVIEWED BY:

Joh MollerDATE: 6-13-94

ACCEPTED BY:

Sharon S. UpsonDATE: 6/17/94



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

R. Hays Bell, Ph.D.
Vice President, Corporate Health, Safety, and Environment
Eastman Kodak Company
343 State Street
Rochester, New York 14650

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

DEC 27 1994

EPA acknowledges the receipt of information submitted by your organization under Section 8(e) 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 §8(e) Document Control Number (e.g., 8EHQ-00-0000) assigned by EPA to your submission(s). Please cite the assigned 8(e) number when submitting follow-up or supplemental information and refer to the reverse side of this page for "EPA Information Requests".

All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims. This information is required and should be submitted if not done so previously. To substantiate claims, submit responses to the questions in the enclosure "Support Information for Confidentiality Claims". This same enclosure is used to support confidentiality claims for non-CAP submissions.

Please address any further correspondence with the Agency related to this TSCA 8(e) submission to:

Document Processing Center (7407)
Attn: TSCA Section 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
Washington, D.C. 20460-0001

EPA looks forward to continued cooperation with your organization in its ongoing efforts to evaluate and manage potential risks posed by chemicals to health and the environment.

Sincerely,

Terry R. O'Bryan
Terry R. O'Bryan
Risk Analysis Branch

Enclosure

13270 A



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Triage of 8(e) Submissions

Date sent to triage: MAR 08 1995

NON-CAP

CAP

Submission number: 13270A

TSCA Inventory: Y N D

Study type (circle appropriate):

Group 1 - Dick Clements (1 copy total)

ECO AQUATO

Group 2 - Ernie Falke (1 copy total)

ATOX SBTOX SEN w/NEUR

Group 3 - Elizabeth Margosches (1 copy each)

STOX CTOX EPI RTOX GTOX
STOX/ONCO CTOX/ONCO IMMUNO CYTO NEUR

Other (FATE, EXPO, MET, etc.): _____

Notes:

THIS IS THE ORIGINAL 8(e) SUBMISSION; PLEASE REFILE AFTER TRIAGE DATABASE ENTRY

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entire document: <u>0</u> 1 2 pages _____	pages <u>1, 2, tabs</u>
Notes:	
Contractor reviewer: <u>LPS</u>	Date: <u>1/25/95</u>

CECATS/TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA: BEHQ. 1294-13270 SEQ. A
 Submission #
 TYPE: INT. SUPP FLWP
 SUBMITTER NAME: Eastman Kodak Company

INFORMATION REQUESTED: FLWP DATE:
 0501 NO INFO REQUESTED
 0502 INFO REQUESTED (TECH)
 0503 INFO REQUESTED (VOL. ACTIONS)
 0504 INFO REQUESTED (REPORTING RATIONALE)
 DISPOSITION:
 0630 REFER TO CHEMICAL SCREENING
 0678 CAP NOTICE

VOLUNTARY ACTIONS:
 0401 NO ACTION REPORTED
 0402 STUDIES PLANNED/IN PROGRESS
 0403 NOTIFICATION OF WORKING CONDITIONS
 0404 LABELING/STANDARDS (CHANGES)
 0405 PROCESSING/CHANGES
 0406 APP/USE DISCONTINUED
 0407 PRODUCTION DISCONTINUED
 0408 CONFIDENTIAL

SUB. DATE: 12/01/94 OTS DATE: 12/05/94 CSRAD DATE: 12/19/94
 CHEMICAL NAME: Dicarbonyl, 3-nitro-1,2-benzene-
 CASE: 51762-67-5

INFORMATION TYPE:	P F C	INFORMATION TYPE:	P F C	INFORMATION TYPE:	P F C
0201 ONCO (HUMAN)	01 02 04	0216 EPICLIN	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. OCCUREL/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 PRODAUSE/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	CONFIDENTIAL	01 02 04		
0212 ACUTE TOX. (ANIMAL)	01 02 04	ALLERG (HUMAN)	01 02 04		
0213 SUB ACUTE TOX (ANIMAL)	01 02 04	ALLERG (ANIMAL)	01 02 04		
0214 SUB CHRONIC TOX (ANIMAL)	01 02 04	METAB/PHARMACO (ANIMAL)	01 02 04		
0215 CHRONIC TOX (ANIMAL)	01 02 04	METAB/PHARMACO (HUMAN)	01 02 04		

IRIAGE DATA: NON-CBI INVENTORY YES NO
 ONGOING REVIEW YES (DROP/REFER) NO (CONTINUE)
 SPECIES: RAT LOW MED HIGH
 TOXICOLOGICAL CONCERN: LOW MED HIGH
 USE: low-volume, site-limited, intermediate for RSD
 PRODUCTION:

-CPSS- 1005950831

0 0 0 0 0 0 0 0 0 0 0

> <ID NUMBER>

8(e)-13270A

> <TOX CONCERN>

L

> <COMMENT>

DERMAL IRRITATION IN RABBITS IS LOW CONCERN. NO SIGNS OF IRRITATION WERE NOTED AFTER 0.5 G OF TEST MATERIAL WAS ADMINISTERED TO 3 ANIMALS.

ACUTE ORAL TOXICITY IN RATS IS LOW CONCERN WITH LD50S OF > 2000, 1414, AND >1641 MG/KG FOR MALES, FEMALES, AND COMBINED, RESPECTIVELY. DOSES (MG/KG) AND MORTALITY: 2000 (2/5 M, 5/5 F), 1000 (0/5 F), AND 500 (0/5 F). CLINICAL SIGNS INCLUDED DIARRHEA, REDUCED AMOUNT OF FECES, DISCOLORED URINE, STAINING OF INGUINAL HAIR AND SKIN OF THE TAIL AND/OR FEET, HYPOTHERMIA, PILOERECTOR, AND DEHYDRATION, SLIGHT TO MODERATE WEAKNESS. NECROPSY REVEALED HEMORRHAGE AND NECROSIS IN GLANDULAR GASTRIC MUCOSA.

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