

October 4, 2006

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Document Control Office (DCO 7407M)  
Office of Pollution Prevention and Toxics  
Environmental Protection Agency  
1200 Pennsylvania Ave. NW  
Washington, DC 20460-0001  
ATTN: 8(d) Health and Safety Reporting Rule (Notification/Reporting)

**CONTAIN NO CBI**

Dear Administrator,

The Eastman Chemical Company has reviewed their files in response to requests by the Environmental Protection Agency to report unpublished health and safety data pursuant to Section 8(d) of the Toxic Substances Control Act (71 Fed. Reg. 47,130, August 16, 2006; 71 Fed. Reg. 57,439, September 29, 2006).

The table below lists those chemicals for which Eastman possessed health and safety data. Copies of this data are organized by the chemical's CAS number on the enclosed compact disc. Please contact Dr. James A. Deyo at 423-229-5208 should you have any problems extracting the information from the disc.

CAS No.	Chemical Name
110-18-9	1,2-Ethanediamine, N,N,N',N'-tetramethyl-
110-33-8	Hexanedioic acid, dihexyl ester
111-85-3	Octane, 1-chloro-
124-63-0	Methanesulfonyl chloride
131-57-7	Methanone, (2-hydroxy-4-methoxyphenyl)phenyl-
25646-71-3	Methanesulfonamide, N-[2-[(4-amino-3-methylphenyl)ethylamino]ethyl]-, sulfate (2:3)
4170-30-3	2-Butenal
645-62-5	2-Hexenal, 2-ethyl-
68987-66-6	Ethene, hydrated, by-products from
7795-95-1	1-Octanesulfonyl chloride
81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide
94-96-2	1,3-Hexanediol, 2-ethyl-
97-00-7	Benzene, 1-chloro-2,4-dinitro-

Regards,

*Marc G. Schurger*  
Marc G. Schurger  
Director, Product Safety & Health



Enclosure: Compact Disc labeled "Eastman TSCA 8(d) Submission; October 4, 2006"

299312

8607000001  
Eastman Attachments

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(MR-299312)

81-07-2

94-96-2

97-00-7

110-18-9

110-33-8

111-85-3

124-63-0

131-57-7

4170-30-3

7795-95-1

25646-71-3

68987-66-6

JUL 18 1986

230831Q

TX-86-190

900101

1-Chloro-2,4-dinitrobenzene  
Positive control for Skin Sensitization  
HAEL No. 85-0129    Acc. No. 900101

Report prepared by L. G. Bernard, A.A.S.

Supervisor of Toxicological Sciences J. L. O'Donoghue, V.M.D., Ph.D.

Date of Study Completion July 10, 1986

Toxicological Sciences Section  
Health and Environment Laboratories  
Eastman Kodak Company  
Rochester, NY 14650

1-Chloro-2,4-dinitrobenzene  
Positive control for Skin Sensitization

Chemical: 1-Chloro-2,4-dinitrobenzene

Accession No.: 900101

HAEL No.: 85-0129

Source Reference I.D. No.: Lot A 11 G

Source: Doug Topping

Date of Study Initiation: November 18, 1985

Comments: All animals were identified by metal ear tags/cage number. All specimens, raw data, and the final report of this work are stored in the archives of the Health and Environment Laboratories. Only limited analyses have been completed on the strength, purity, composition, stability, uniformity, and concentration of the test material. Professionals involved in this study other than the study director included: Gordon J. Hankinson, D.V.M., M.S., Laboratory Animal Medicine. Deviations from approved protocols or standard operating procedures included: None

Douglas C. Topping Date July 9, 1986

Study Director for Acute Studies:

John L. Wyfu Date July 10, 1986

Supervisor, Toxicological Sciences:

ACUTE TOXICITY - SKIN SENSITIZATION

BUEHLER TEST

No. guinea pigs per dose: 5 of each sex/dose	Estimated
Initial Body weight range (g): (M) <u>392 - 457</u> (F) <u>312 - 388</u>	<u>Human Risk</u>
Strain: CRL (HA)BR Hartley	Low
Test SOP No.: TA 350	Moderate
Sex: Male and Female	<u>High</u>

Primary Irritation Test

Concentrations tested: 0.25, 0.50, 1.00, 2.00%

Vehicle: Ethyl alcohol

Maximum non-irritating concentration: 0.25% compound in ethyl alcohol

Minimum irritating concentration: 0.50% compound in ethyl alcohol

Induction and Challenge Study

Induction Preparation (3 weekly doses): 0.50% compound in ethyl alcohol

Challenge Preparation: 0.25% compound in ethyl alcohol

SENSITIZATION	NUMBER OF ANIMALS RESPONDING				TOTAL SCORE
	NEGATIVE TO +/-	SLIGHT	MODERATE	STRONG	
IRRITATION CONTROL	10				0
INDUCED ANIMALS			3	7	85

REMARKS: The test article was a potent sensitizer in this assay, and has a high potential for human sensitization.

O.A. INSPECTION STATEMENT  
(CFR 58.35(B)(7))

STUDY: 85-0129-1 STUDY DIRECTOR: TOPPING, D.C.  
ACCESSION NUMBER: 900101

STUDY TYPE: ACUTE TOXICITY REPORT

*Jonathan P. Roberts*  
(AUDITOR, QUALITY ASSURANCE UNIT) 7/3/86  
DATE

THIS STUDY WAS INSPECTED BY 1 OR MORE PERSONS OF THE QUALITY ASSURANCE UNIT OF THE H&L, EASTMAN KODAK COMPANY, ROCHESTER, N.Y. AND WRITTEN STATUS REPORTS WERE SUBMITTED ON THE FOLLOWING DATES:

INSPECTION DATES	STUDY TYPE/PHASE(S) INSPECTED	STATUS REPORT DATES
11/18/85	BUEHLER TEST FOR SENSITIZATION PROTOCOL APPENDIX SUBMISSION	
12/18/85	BUEHLER TEST FOR SENSITIZATION TEST SYSTEM WEIGHTS TEST ARTICLE APPLICATION TO TEST SYSTEM CHALLENGE APPLICATION	12/18/85
07/08/86	ACUTE TOXICITY REPORT FINAL REPORT REVIEW	07/08/86

APR 22 1988

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TX-88-63

SKIN SENSITIZATION STUDY OF 1-CHLORO-2,4-DINITROBENZENE  
POSITIVE CONTROL (BUEHLER METHOD)

HAEL NO. 85-0129      ACC. NO. 900101

BY KENNETH P. SHEPARD, B.S.

TOXICOLOGICAL SCIENCES LABORATORY  
HEALTH AND ENVIRONMENT LABORATORIES  
EASTMAN KODAK COMPANY  
ROCHESTER, NY 14650

DATE OF STUDY COMPLETION      APRIL 14, 1988

POSITIVE CONTROL FOR SKIN SENSITIZATION (BUEHLER TEST)

Chemical: 1-Chloro-2,4-dinitrobenzene

Accession No.: 900101

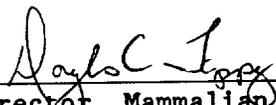
HAEL No.: 85-0129

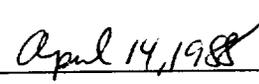
Source Reference I.D. No.: Lot A 11 G

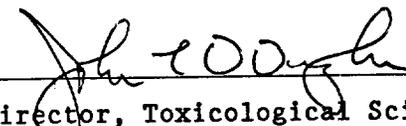
Source: Eastman Kodak Company

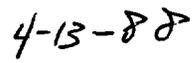
Date of Study Initiation: February 24, 1988

Comments: All animals were identified by metal ear tags/cage number. All specimens, raw data, and the final report of this work are stored in the archives of the Health and Environment Laboratories. Only limited analyses have been completed on the strength, purity, composition, stability, uniformity, and concentration of the test material. Professional involved in this study other than the study director included: Gordon J. Hankinson, D.V.M., M.S., Laboratory Animal Medicine. Deviations from approved protocols or standard operating procedures included: None

  
\_\_\_\_\_  
Director, Mammalian Toxicology Section  
Study Director

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Director, Toxicological Sciences Laboratory

  
\_\_\_\_\_  
Date

ACUTE TOXICITY - SKIN SENSITIZATION  
BUEHLER TEST

No. guinea pigs per dose: Five of each sex/dose	Estimated
Initial Body weight range (g): (M) <u>391 - 500</u> (F) <u>410 - 489</u>	<u>Human Risk</u>
Strain: Crl:(HA)BR Hartley	Low
Test SOP No.: TA 350	Moderate
Sex: Male and Female	<u>High</u>

Primary Irritation Test*	
Concentrations tested: 0.25, 0.50, 1.00 and 2.00%	
Vehicle: Ethanol	
Maximum non-irritating concentration: 0.25% compound in ethanol	
Minimum irritating concentration: 0.50% compound in ethanol	

\* Primary irritation data from previous test conducted on this sample of the test material (Report TX-86-190, Dated July 10, 1986).

Induction and Challenge Study	
Induction preparation (3 weekly doses): 0.50% (0.25 g of compound in 50 mL of ethanol)	
Challenge preparation: 0.25% (0.25 g of compound in 100 mL of ethanol)	

SENSITIZATION	NUMBER OF ANIMALS RESPONDING			
	NEGATIVE TO +/-	SLIGHT	MODERATE	STRONG
IRRITATION CONTROL	10			
INDUCED ANIMALS		1	4	5

REMARKS: The test article elicited a moderate to strong sensitization reaction when tested by this method. Previous experience with this material had shown it caused primary irritation at a concentration of 0.50% in ethanol, but not at a concentration of 0.25% in ethanol. No erythema or edema were noted at challenge in the irritation control animals, but slight erythema (one of ten), moderate erythema (four of ten) and strong erythema (five of ten) were seen in the induced animals. No edema was seen in the irritation control animals or the animals induced with the test article.



STUDY TITLE

1-CHLORO-2,4-DINITROBENZENE  
(POSITIVE CONTROL)

SKIN SENSITIZATION STUDY (BUHLER METHOD) IN THE GUINEA PIG

HAEL NO. 85-0129 KAN 900101  
CAS REGISTRY NUMBER: 97-00-7

FINAL REPORT

AUTHOR

Kenneth P. Shepard, B.S.

PERFORMING LABORATORY

Toxicological Sciences Laboratory  
Health and Environment Laboratories  
Eastman Kodak Company  
1100 Ridgeway Avenue  
B-320 Kodak Park  
Rochester, New York 14652-3615  
USA

LABORATORY PROJECT ID

HAEL Number 85-0129

STUDY SPONSOR

Eastman Kodak Company

STUDY COMPLETION DATE

December 17, 1990

Q.A. INSPECTION STATEMENT  
(CFR 58.35(B)(7) 792.35(B)(7) 160.35(B)(7))

STUDY: 85-0129-1 STUDY DIRECTOR: TOPPING, D.C.

ACCESSION NUMBER: 900101

STUDY TYPE: BUEHLER TEST FOR SENSITIZATION

M. J. Jones  
(AUDITOR, QUALITY ASSURANCE UNIT)

12/7/90  
DATE

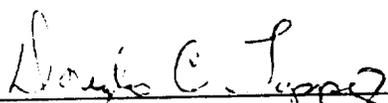
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TO THE BEST OF MY KNOWLEDGE, THIS FINAL REPORT ACCURATELY DESCRIBES THE METHODS AND STANDARD OPERATING PROCEDURES, AND THE REPORTED RESULTS ACCURATELY REFLECT THE RAW DATA. THIS STUDY WAS INSPECTED BY 1 OR MORE PERSONS OF THE QUALITY ASSURANCE UNIT OF THE H&L, EASTMAN KODAK COMPANY, ROCHESTER, N.Y. AND WRITTEN STATUS REPORTS WERE SUBMITTED ON THE FOLLOWING DATES:  
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<u>INSPECTION DATES</u>	<u>PHASE(S) INSPECTED</u>	<u>STATUS REPORT DATES</u>
07/10/90	PROTOCOL APPENDIX SUBMISSION INDUCTION	
07/17/90	TEST ARTICLE DISTRIBUTION RECORDS TEST ARTICLE WEIGH AND MIX WITH CARRIER	12/07/90
12/07/90	FINAL REPORT REVIEW	12/07/90

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) as required by Council Directive 87/18/EEC of December 18, 1986.

  
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Douglas C. Topping, Ph.D.  
Study Director

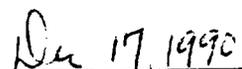
  
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Date

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STUDY TITLE

1-CHLORO-2,4-DINITROBENZENE  
(POSITIVE CONTROL)

SKIN SENSITIZATION STUDY (BUEHLER METHOD) IN THE GUINEA PIG

HAKL NO. 85-0129 KAN 900101  
CAS REGISTRY NUMBER: 97-00-7

ABSTRACT

A dermal sensitization study was conducted with 1-chloro-2,4-dinitrobenzene in guinea pigs using the Buehler method. Moderate erythema was observed at the application site on all animals induced with the test material 24 and/or 48 hours after challenge. Slight or moderate edema was noted on 18 of 20 of these animals at 48 hours after challenge. Only slight erythema was noted on 4 of 20 control animals 48 hours after challenge. All animals survived to termination of the study and all gained weight normally.

Based on these results, the test material was considered to cause dermal sensitization in this strain of guinea pig when tested by the Buehler method.

PERFORMING LABORATORY

Toxicological Sciences Laboratory  
Health and Environment Laboratories  
Eastman Kodak Company  
1100 Ridgeway Avenue  
B-320 Kodak Park  
Rochester, New York 14652-3615  
USA

SPONSOR

Eastman Kodak Company

STUDY DATES

Study Initiation: July 10, 1990  
Experiment Initiation: July 10, 1990  
Experiment Completion: August 9, 1990  
Study Completion: December 17, 1990

STUDY DIRECTOR

Douglas C. Topping, Ph.D., DABT

OTHER KEY PERSONNEL

John W. Mosher, B.S., and Chris M. Ashley, Study Technicians  
Kenneth P. Shepard, B.S., Principal Investigator  
Gordon J. Hankinson, D.V.M., M.S., Laboratory Animal Medicine

PURPOSE/OBJECTIVE

The purpose of the study was to determine whether the test material has the ability to produce delayed contact hypersensitivity (skin sensitization) in the strain of guinea pig used in the performing laboratory when tested by the Buehler method.

### TEST SUBSTANCE

Chemical Name: 1-Chloro-2,4-dinitrobenzene  
CAS Registry Number: 97-00-7  
KAN: 900101  
HAEL Laboratory Number: 85-0129  
SRID or Lot I.D. Number: Lot AllG  
Physical State and Appearance: Yellow solid  
Received at Performing Laboratory: November 13, 1985

### TEST SYSTEM

Species: Guinea Pig  
Strain: Crl:(HA)BR VAF/Plus™  
Source: Charles River Laboratories, Kingston, NY, USA  
For Primary Irritation Study:

Primary irritation data were from a previous test conducted on this sample of the test material (Report TX-86-190, Dated July 10, 1986).

For Induction and Challenge Study:

No. of Animals: 40; 20 irritation control and 20 induced animals  
Sex: Male & Female; Ten of each per group.  
Body Weight Range (g): (M) 301 - 391 (F) 305 - 382  
Age: Approximately 4-6 weeks old.

### HUSBANDRY AND ENVIRONMENTAL CONDITIONS

#### Housing

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

#### Environmental Conditions

A photoperiod of 12 hours light from 6 a.m. to 6 p.m. was maintained. Room temperature was maintained at 68-74°F. Relative humidity was maintained at 46-52%.

#### Diet and Water

Agway® Prolab™ Guinea Pig Diet certified pellets, and water, obtained from the 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

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

HUSBANDRY AND ENVIRONMENTAL CONDITIONS CONT.

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 406, Dated 12 May, 1981 (Annex V, Test B.6, Appendix). Ten animals per sex were used in each group.

Study Design References

Buehler (1965) and Ritz and Buehler (1980)

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 each dose level. Randomization was done by computer-generated lists using the Automated Animal Toxicology System. After assignment of animals to individual groups, the body weights were determined to ensure that individual body weights were between 300-500 grams.

Identification Numbers of Animals Used

Induced with test material -	males: <u>441 - 450</u>	females: <u>461 - 470</u>
Irritation control -	males: <u>451 - 460</u>	females: <u>471 - 480</u>

Dosing Regimen and Evaluation

Techniques for Occluded Patch Procedure

Ethanol was used as the vehicle for preparation of all test material concentrations. One-half milliliter of the test material solution was applied to a fiber pad approximately one inch square in size. The backs of the guinea pigs were clipped before application of the material. Pads containing the test material were held in place by wrapping an elastic adhesive bandage around the torso of the animal and securing it in place. The patches were left in place for six hours, after which they were removed and the skin wiped free of excess material. Observations were made 24 and 48 hours after application and scored for signs of dermal reaction.

TEST PROCEDURES AND CONDITIONS CONT.

Dosing Regimen and Evaluation Cont.

Techniques for Occluded Patch Procedure Cont.

The method of scoring was as follows:

<u>Erythema</u>	<u>Edema</u>
0 - none	0 - none
± - very slight, usually nonconfluent	1 - just discernable to touch - slight
1 - slight usually confluent	2 - easily determined - moderate
2 - easily determined - moderate	3 - difficult to pick up a fold of skin - strong
3 - dark red - strong	

Primary Irritation Screen

The induction portion of the study requires prior determination of minimal irritant and maximal non-irritant concentrations. For this determination, primary irritation data from a previous test conducted on this sample of the test material were used (Report TX-86-190, Dated July 10, 1986).

Induction and Challenge Procedure

The test material, at the minimum irritating concentration (0.50% compound in ethanol), was applied to the backs of 20 guinea pigs under fiber pads using the technique described under the section "Techniques for Occluded Patch Procedure." After six hours, the patch was removed and the skin wiped free of excess material. This procedure was repeated weekly for three weeks. Two weeks after the last induction exposure, the maximal non-irritant concentration (0.25% compound in ethanol) was applied to the backs of the 20 guinea pigs using the same procedure, except that the patches with test material were applied to the backs on the opposite side of the midline from the side used for induction. To differentiate dermal irritation from sensitization, the remaining 20 animals were induced with the vehicle (ethanol) only and subjected to the same challenge procedure. Evaluations were made on both groups of animals at 24 and 48 hours after challenge, using the criteria outlined above. Redness at the challenge site clearly greater than that seen on the irritation control animals is considered an allergic response.

Clinical Observations

Animals were observed once each day for mortality.

Body Weight Determinations

Body weights were collected on the day of the first induction and again when challenged.

TEST PROCEDURES AND CONDITIONS CONT.

Necropsy

Animals were not necropsied at the conclusion of the test.

RESULTS

Primary Irritation Screen

Concentrations tested: 0.25, 0.50, 1.00 and 2.00%

Vehicle: Ethanol

Maximum non-irritating concentration: 0.25% compound in ethanol

Minimum irritating concentration: 0.50% compound in ethanol

Primary irritation data were from a previous test conducted on this sample of the test material (Report TX-86-190, Dated July 10, 1986).

Induction and Challenge

Group	Animal Number	Score (Ery.,Edema)		Group	Animal Number	Score (Ery.,Edema)	
		24 hrs.	48 hrs.			24 hrs.	48 hrs.
Induced with the Test Material	441-M	2,0	2,1	Induced with the Vehicle	451-M	0,0	0,0
	442-M	1,0	2,1		452-M	0,0	0,0
	443-M	1,0	2,1		453-M	0,0	0,0
	444-M	2,0	2,1		454-M	0,0	1,0
	445-M	2,0	2,1		455-M	0,0	0,0
	446-M	2,0	1,0		456-M	0,0	0,0
	447-M	1,0	2,1		457-M	0,0	0,0
	448-M	2,0	2,1		458-M	0,0	0,0
	449-M	2,0	2,1		459-M	0,0	0,0
	450-M	2,0	2,1		460-M	0,0	0,0
	461-F	1,0	2,1		471-F	0,0	0,0
	462-F	1,0	2,1		472-F	0,0	1,0
	463-F	2,0	1,0		473-F	0,0	0,0
	464-F	2,0	2,1		474-F	0,0	0,0
	465-F	2,0	2,1		475-F	0,0	0,0
	466-F	2,0	2,2		476-F	0,0	0,0
	467-F	2,0	2,1		477-F	0,0	1,0
	468-F	2,0	2,1		478-F	0,0	0,0
	469-F	1,0	2,1		479-F	0,0	0,0
	470-F	2,0	2,1		480-F	0,0	1,0

RESULTS CONT.

Degree and Nature of Irritation

In animals previously induced with the test article, responses seen 24 and/or 48 hours after challenge included moderate erythema (20/20) and slight (17/20) to moderate (1/20) edema.

Signs of irritation seen in animals induced with the vehicle only were limited to slight erythema (4/20) at 48 hours after challenge.

Description of Serious Lesions

No serious lesions were noted during the study.

Toxic Effects Other Than Irritation

No toxic effects or systemic clinical signs were noted during the study.

Weight Gain

All animals in the induction and challenge portion of this study gained weight normally.

Individual Body Weights

Group	Animal Number	Body Weights (g)		Group	Animal Number	Body Weights (g)	
		Initial	End			Initial	End
Induced with the Test Material	441-M	304	547	Induced with the Vehicle	451-M	375	611
	442-M	332	533		452-M	355	609
	443-M	313	530		453-M	356	642
	444-M	301	464		454-M	389	714
	445-M	372	636		455-M	350	583
	446-M	349	611		456-M	369	675
	447-M	311	555		457-M	370	669
	448-M	391	679		458-M	326	511
	449-M	305	573		459-M	329	624
	450-M	343	561		460-M	325	543
	461-F	318	536		471-F	363	569
	462-F	333	501		472-F	382	460
	463-F	348	541		473-F	352	571
	464-F	361	560		474-F	339	541
	465-F	357	572		475-F	355	539
	466-F	364	503		476-F	367	502
	467-F	337	506		477-F	382	624
	468-F	305	494		478-F	348	564
	469-F	357	591		479-F	354	543
	470-F	346	545		480-F	362	575

### DATA ANALYSIS

Evaluation of data was not done statistically, but rather by the following method recommended by Buehler: redness at the challenge site which is clearly greater than that seen in the irritation control animals is considered an allergic response. In general, dermal scores of 1 or greater (in the absence of a dermal response in irritation control animals) are considered indicative of sensitization. Scores of  $\pm$  are considered equivocal, although a high percentage of scores of  $\pm$  in treated animals with no dermal response in irritation control animals is considered suggestive of sensitization.

### DISCUSSION AND INTERPRETATION

Previous experience with this material had shown it caused primary irritation at a concentration of 0.50% in ethanol, but not at a concentration of 0.25% in ethanol. For the induction exposure, the test material was applied weekly for three weeks at the minimum irritating concentration (0.50% compound in ethanol). Animals in the control group were induced with the vehicle only. Two weeks after the last induction exposure, the maximal non-irritant concentration (0.25% compound in ethanol) was applied to animals in both groups.

The test material elicited a positive sensitization reaction when tested by this method. Moderate erythema (20/20) and slight (17/20) to moderate (1/20) edema were seen in animals induced with the test material 24 and/or 48 hours after the challenge exposure. Moreover, the response was greater at 48 hours than at 24 hours for 18 of 20 animals, a result indicative of a sensitization response. Only slight erythema (4/20) was noted in the control animals 48 hours after challenge. No edema was seen in the control animals at either 24 or 48 hours after challenge. All animals gained weight normally, and all survived to termination of the study. No toxic effects or systemic clinical signs were noted during the study. Based on these results, the test material was considered to be a dermal sensitizer in guinea pigs.

### CONCLUSION

Based on these results, the test material was considered to cause dermal sensitization in this strain of guinea pig when tested by the Buehler method.

### DATA STORAGE

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

REFERENCES

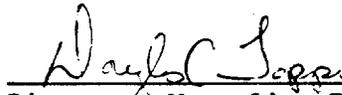
Buehler, E.V. (1965). Delayed contact hypersensitivity in the guinea pig. Arch. Dermatol., 91: 171-175.

Ritz, H.L. and Buehler, E.V. (1980). Planning, conduct and interpretation of guinea pig sensitization patch tests. In: Current Concepts in Cutaneous Toxicity, (V.A. Drill and D. Lazar, eds.), pp. 25-40. Academic Press, New York.

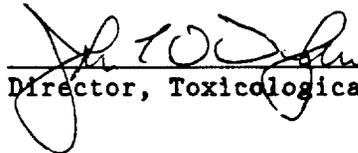
SIGNATURE PAGE

  
Principal Investigator

December 2, 1990  
Date

  
Director, Mammalian Toxicology Section  
Study Director

December 17, 1990  
Date

  
Director, Toxicological Sciences Laboratory

December 17, 1990  
Date

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TX-88-215

JAN 19 1989

SKIN SENSITIZATION STUDY OF 1-CHLORO-2,4-DINITROBENZENE  
POSITIVE CONTROL (BUEHLER METHOD)

HAEL NO. 85-0129      ACC. NO. 900101

BY KENNETH P. SHEPARD, B.S.

TOXICOLOGICAL SCIENCES LABORATORY  
HEALTH AND ENVIRONMENT LABORATORIES  
EASTMAN KODAK COMPANY  
ROCHESTER, NY 14652-3615

DATE OF STUDY COMPLETION      JANUARY 12, 1989

POSITIVE CONTROL FOR SKIN SENSITIZATION (BUEHLER TEST)

Chemical: 1-Chloro-2,4-dinitrobenzene

Accession No.: 900101

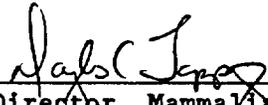
HAEL No.: 85-0129

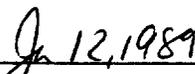
Source Reference I.D. No.: Lot A 11 G

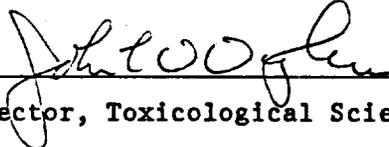
Source: Eastman Kodak Company

Date of Study Initiation: November 15, 1988

Comments: All animals were identified by metal ear tags/cage number. All specimens, raw data, and the final report of this work are stored in the archives of the Health and Environment Laboratories. Only limited analyses have been completed on the strength, purity, composition, stability, uniformity, and concentration of the test material. Professional involved in this study other than the study director included: Gordon J. Hankinson, D.V.M., M.S., Laboratory Animal Medicine. Deviations from approved protocols or standard operating procedures included: None

  
\_\_\_\_\_  
Director, Mammalian Toxicology Section  
Study Director

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Director, Toxicological Sciences Laboratory

  
\_\_\_\_\_  
Date

ACUTE TOXICITY - SKIN SENSITIZATION  
BUEHLER TEST

No. guinea pigs per dose: Five of each sex/dose	Estimated
Initial Body weight range (g): (M) <u>336 - 426</u> (F) <u>372 - 434</u>	<u>Human Risk</u>
Strain: Crl:(HA)BR Hartley	Low
Test SOP No.: TA 350	Moderate
Sex: Male and Female	<u>High</u>

Primary Irritation Test\*

Concentrations tested: 0.25, 0.50, 1.00 and 2.00%  
 Vehicle: Ethanol  
 Maximum non-irritating concentration: 0.25% compound in ethanol  
 Minimum irritating concentration: 0.50% compound in ethanol

\* Primary irritation data from previous test conducted on this sample of the test material (Report TX-86-190, Dated July 10, 1986).

Induction and Challenge Study

Induction preparation (3 weekly doses): 0.50% (0.25 g of compound in 50 mL of ethanol)  
 Challenge preparation: 0.25% (0.25 g of compound in 100 mL of ethanol)

SENSITIZATION	NUMBER OF ANIMALS RESPONDING			
	NEGATIVE TO +/-	SLIGHT	MODERATE	STRONG
IRRITATION CONTROL	10			
INDUCED ANIMALS			2	8

REMARKS: The test article elicited a strong sensitization reaction when tested by this method. Previous experience with this material had shown it caused primary irritation at a concentration of 0.50% in ethanol, but not at a concentration of 0.25% in ethanol. No erythema or edema were noted at challenge in the irritation control animals, but moderate erythema (two of ten) and strong erythema (eight of ten) were seen in the induced animals. No edema was seen in the irritation control animals or the animals induced with the test article.

Q.A. INSPECTION STATEMENT  
(CFR 58.35(B)(7) 792.35(B)(7) 160.35(B)(7))

PAGE  
01/10/89

STUDY: 85-0129-1 STUDY DIRECTOR: TOPPING, D.C.  
ACCESSION NUMBER: 900101

STUDY TYPE: BUEHLER TEST FOR SENSITIZATION

M. Sue James  
(AUDITOR, QUALITY ASSURANCE UNIT)

1/10/89  
DATE

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THIS STUDY WAS INSPECTED BY 1 OR MORE PERSONS OF THE QUALITY ASSURANCE UNIT OF THE HAEI, EASTMAN KODAK COMPANY, ROCHESTER, N.Y. AND WRITTEN STATUS REPORTS WERE SUBMITTED ON THE FOLLOWING DATES:  
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INSPECTION DATES -----	PHASE(S) INSPECTED -----	STATUS REPORT DATES -----
11/15/88	PROTOCOL APPENDIX SUBMISSION FIRST INTRODUCTION	
01/10/89	FINAL REPORT REVIEW	01/10/89

236174N  
TX-87-159

SKIN SENSITIZATION STUDY OF 1-CHLORO-2,4-DINITROBENZENE  
(POSITIVE CONTROL)  
HAEL NO. 85-0129 ACC. NO. 900101

BY DOUGLAS C. TOPPING, PH.D., DABT

TOXICOLOGICAL SCIENCES SECTION  
HEALTH AND ENVIRONMENT LABORATORIES  
EASTMAN KODAK COMPANY  
ROCHESTER, NY 14650

DATE OF STUDY COMPLETION SEPTEMBER 14, 1987

236174N  
TX-87-159

1-Chloro-2,4-dinitrobenzene  
Positive control for Skin Sensitization

Chemical: 1-Chloro-2,4-dinitrobenzene

Accession No.: 900101

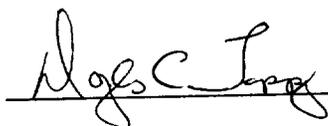
HAEL No.: 85-0129

Source Reference I.D. No.: Lot A 11 G

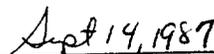
Source: Eastman Kodak Company

Date of Study Initiation: February 11, 1987

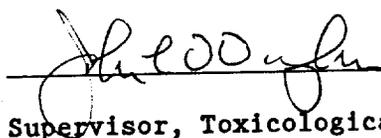
Comments: All animals were identified by metal ear tags/cage number. All specimens, raw data, and the final report of this work are stored in the archives of the Health and Environment Laboratories. Only limited analyses have been completed on the strength, purity, composition, stability, uniformity, and concentration of the test material. Professionals involved in this study other than the study director included: Gordon J. Hankinson, D.V.M., M.S., Laboratory Animal Medicine. Deviations from approved protocols or standard operating procedures included: None



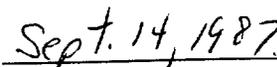
Study Director for Acute Studies



Date



Supervisor, Toxicological Sciences Section



Date

## Unreadable Image

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STUDY: 85-0129-1      STUDY DIRECTOR: TOPPING, D.C.  
ACCESSION NUMBER: 900101

STUDY TYPE:      BUEHLER TEST FOR SENSITIZATION

*M. Lee James*  
(AUDITOR, QUALITY ASSURANCE UNIT)

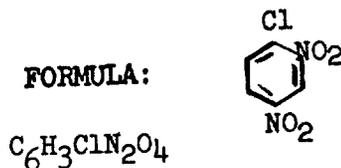
9/14/87  
DATE

THIS STUDY WAS INSPECTED BY 1 OR MORE PERSONS OF THE QUALITY ASSURANCE UNIT OF THE HAEI, EASTMAN KODAK COMPANY, ROCHESTER, N.Y. AND WRITTEN STATUS REPORTS WERE SUBMITTED ON THE FOLLOWING DATES:

INSPECTION DATES	PHASE(S) INSPECTED	STATUS REPORT DATES
02/11/87	PROTOCOL APPENDIX SUBMISSION	
02/18/87	PROTOCOL APPENDIX SUBMISSION PERFORMED THE 2ND INDUCTION.	
02/25/87	PROTOCOL APPENDIX SUBMISSION THIRD APPLICATION	
03/11/87	TEST SYSTEM WEIGHTS TEST ARTICLE WEIGH AND MIX WITH CARRIER TEST ARTICLE-CARRIER-MIXTURE APPLICATION TO TEST SYSTEMS CHALLENGE APPLICATION POSITIVE CONTROL FOR BUEHLER TEST	03/11/87
09/12/87	FINAL REPORT REVIEW	09/14/87

TOXICITY AND HEALTH HAZARD SUMMARY

CHEMICAL: 1-Chloro-2,4-dinitrobenzene  
SYNONYMS:  
PHYSICAL FORM: Solid  
MP or BP in °C: M.P. - 50-52°



TOXICITY

This compound has an LD<sub>50</sub> in rats of 400-3200 mg/kg by the oral route. When applied to the skin of guinea pigs, strong skin irritation was produced with evidence of skin penetration.

HAZARDS

This compound may produce severe skin irritation with possible skin penetration. Repeated skin contacts with this compound has caused many cases of dermatitis in industry.

PRECAUTIONARY HANDLING

Avoid direct contact with skin, eyes, clothing.

LABEL: Suggested Warning Phrases

WARNING! HAZARDOUS SOLID.

Causes skin irritation.

Avoid contact with skin, eyes, and clothing.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes; get medical attention.

REFERENCES:

1. Unpublished data - Laboratory of Industrial Medicine, Eastman Kodak Company.

HEALTH HAZARD: (EKCo TS-12)

SUMMARIZED BY: Eugene J. Stanton, M. D.

R - 2

DATE:

August 26, 1964

S - 3

FOR USE ONLY WITHIN EASTMAN KODAK COMPANY

TOXICITY REPORT - E.K.CO. - LABORATORY OF INDUSTRIAL MEDICINE

900100  
117

Chemical: 1-Chloro-2,4-dinitrobenzene

No: 101

Source: W. Hartman, B-126 Formula:

Solution	Animals* No. and Species	Route**	Dose Range	Approx. LD <sub>50</sub>	Symptoms	Time of Death	Wt. Change 2 wks
<u>Acute Toxicity</u>							
Suspension - 10% in 2% NaCS in water	3 R	PO	mg/kg 50, 400, 3200	mg/kg 400-3200	Moderate to very weak in first two doses. Highest dose convulsive.	35 min	2†
						Notebook No.	57 P 450
<u>Skin Absorption and Irritation</u>							
Solid moistened with water	2 GP	rubber cuff & gauze pad	cc/kg ga 1-2	cc/kg ga > 2	Gross edema with epidermal erosion, area macular, necrotic. After two weeks thick eschar formed. Necrotic area migrated laterally from initial patch.	-	†57, -45
						Notebook No.	57 P 450

\*G.P. - Guinea Pig, M - Mouse,  
R - Rat, RB - Rabbit

\*\*PO - Orally, IP - Intraperitoneally,  
IM - Intramuscularly, IC - Intracutaneously

6-12-58

Remarks: Slightly toxic compound. Strong primary irritant with evidence of skin absorption. Known skin sensitizer.