



ORIGINAL

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8EHQ-0494-12990

April 14, 1994

Document Processing Center
Office of Pollution Prevention and Toxics
U. S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
ATTN: 8(e) Coordinator



8EHQ-94-12990
INIT 04/18/94

REC'D
OFFICE OF POLLUTION
PREVENTION AND TOXICS
94 APR 19 AM 11:21

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 3a,4,5,6,7,7a-hexahydro-4,7-methanoinden-6-ol (synonym: hexahydro-4,7-methanoinden-6-ol) [CAS# 3385-61-3].

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.

The test material caused strong irritation in a dermal irritation study conducted in guinea pigs. There is no evidence that the chemical was absorbed through the skin. In acute oral toxicity studies, central nervous system effects were observed only in moribund rats and mice that died on the day of dosing.

In the past, the test material has been manufactured and used internally to manufacture an intermediate which is then used to manufacture a component of an article. Unreacted test material is not expected to be present in the final product. We are not aware of any adverse health problems associated with the manufacture or use of the test material by us. The remaining stock of material will be sold to an outside vendor who will manufacture the intermediate for us. Although we will share this information with the outside vendor, we will no longer have complete control over potential exposure to the test material. As control of the material will pass to another company, we have reviewed and revised the current material safety data sheet and the potential for exposure. A copy of the material safety data sheet for the test material is included with this submission.

Please contact me if additional information is required.



88940000232

Sincerely,

R. Hays Bell
R. Hays Bell
(716) 722-5036

RECEIVED
6/1/94

RHB:JAF

Enc.

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



7 pgs.

TOXICITY REPORT - EASTMAN KODAK COMPANY - HEALTH AND SAFETY LABORATORY

Chemical: Hexahydro-4,7-methanoinden-6-ol

Source: R. B. Clark Formula:

Solution	Animals* No. and Species	Route**	Dose Range mg/kg	Approx. LD ₅₀ mg/kg	Symptoms	Time of Death	Wt. Change 2 wk
<u>Acute Toxicity</u>							
As received	20 R	PO	200-3200	3200	Normal to very wk. - prostrate - decreased respiration - no reflexes.	4 hr. - 1 day	18+
"	20 R	IP	200-3200	800	Normal to very wk. - prostrate - coarse tremor - convulsivelike movements - decreased respiration - no reflexes - bloody urine.	1.5 hr.	10+
"	20 M	PO	200-3200	2260	Normal to quite wk. - prostrate - coarse tremor - convulsivelike movements - decreased respiration - no reflexes.	4 hr. - 1 day	16+
"	20 M	IP	200-3200	476	Normal to very wk. - prostrate - coarse tremor - convulsivelike movements - no reflexes - bloody urine.	0.5 hr. - 5 days	6+ 1-
<u>Skin Absorption and Irritation</u>							
Undilute	3 G.P.	Cuff	5 kg ml 5 - 20	20 kg ml >20	24 hr.: Mod. to gross edema, sl. ery., scattered necrosis. 1 wk.: Eschar over entire patch area. 2 wk.: Heavy scarring over entire patch area, a couple small secondary eschars, complete alopecia.	-	+45 +65 +85

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

**PO = Orally, IP = Intraperitoneally,
Cuff = Impervious cuff

Remarks: Slightly toxic to rats and mice orally and to rats intraperitoneally.
Moderately toxic to mice intraperitoneally. Strong skin irritant. No evidence of skin absorption.

9-16-76/bdo

MATERIAL SAFETY DATA SHEET

220000233/F/USA

Approval Date: 04/05/1994

Print Date: 04/05/1994

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-ol

Product Identification Number(s): CIN 10056060

Manufacturer/Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call: 716-722-5151

For Other Information, call the Marketing and Distribution Center in Your Area.

Synonym(s): KAN 011092, CIN 10056060

Molecular Formula: C10 H14 O

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

100 3a,4,5,6,7,7a-Hexahydro-4,7-methano-1H-inden-6-ol (003385-61-3)

3. HAZARDS IDENTIFICATION

DANGER!

CAUSES SKIN AND EYE BURNS

HARMFUL IF SWALLOWED

VAPOR IRRITATING TO THE EYES AND RESPIRATORY TRACT

Eastman Kodak Hazard Ratings: R-2, S-3, F-1, C-0

HMIS Hazard Ratings:

Health - 3, Flammability - 1, Reactivity - 0, Personal Protection - D

NFPA Hazard Ratings:

Health - 2, Flammability - 1, Reactivity (Stability) - 0

NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

4. FIRST-AID MEASURES

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention.

Eyes: Immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.

MATERIAL SAFETY DATA SHEET

220000233/F/USA

Approval Date: 04/05/1994

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Skin: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water spray, carbon dioxide (CO2), dry chemical, alcohol foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: None

6. ACCIDENTAL RELEASE MEASURES

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Use with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials.

Storage: Keep container closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: Not established

Ventilation: Use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. Respirator type: Organic vapor. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

MATERIAL SAFETY DATA SHEET

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Eye Protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection: Wear impervious gloves and protective clothing appropriate for the risk of exposure.

Recommended Decontamination Facilities: Eye bath, washing facilities, safety shower

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Colorless

Odor: Not available

Specific Gravity (water = 1): Not available

Vapor Pressure: Not available

Vapor Density (Air = 1): Not available

Volatile Fraction by Weight: 100 %

Boiling Point: Not available

Solubility in Water: Not available

pH: Not available

Flash Point: 113°C (235°F) Cleveland open cup

10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility: Strong oxidizing agents

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

Inhalation: Vapor irritating. May cause irritation to the mucous membranes and upper respiratory tract.

Eyes: Causes burns. Vapor irritating.

Skin: Causes burns.

Ingestion: Harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.

Acute Toxicity Data:

Oral LD-50 (rat): 3200 mg/kg

MATERIAL SAFETY DATA SHEET

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Page 4

Oral LD-50 (mouse): 2260 mg/kg
Skin irritation: strong

12. ECOLOGICAL INFORMATION

This section has not been completed.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Contract with a licensed chemical disposal agency.

14. TRANSPORT INFORMATION

- For transportation information regarding this material, please phone the Irregular Shipping Department (716) 722-1732.

15. REGULATORY INFORMATION

- Material(s) known to the State of California to cause cancer: None
- Material(s) known to the State of California to cause adverse reproductive effects: None
- Carcinogenicity Classification (components present at 0.1% or more):
 - International Agency for Research on Cancer (IARC): None
 - American Conference of Governmental Industrial Hygienists (ACGIH): None
 - National Toxicology Program (NTP): None
 - Occupational Safety and Health Administration (OSHA): None
- Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: None

16. OTHER INFORMATION

US/Canadian Label Statements:

DANGER!
CAUSES SKIN AND EYE BURNS
HARMFUL IF SWALLOWED
VAPOR IRRITATING TO THE EYES AND RESPIRATORY TRACT

Do not get in eyes, on skin, on clothing.
Avoid breathing vapor.
Use with adequate ventilation.
Wash thoroughly after handling.

MATERIAL SAFETY DATA SHEET

220000233/F/USA

Approval Date: 04/05/1994

Print Date: 04/05/1994

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FIRST AID: If swallowed, do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. If inhaled, move to fresh air. Treat symptomatically. In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Keep out of reach of children.

Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood.

Additional hazard precautions for containers greater than 1 gallon of liquid or 5 pounds of solid:

IN CASE OF FIRE: Use water spray, carbon dioxide (CO₂), dry chemical, alcohol foam.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.



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".

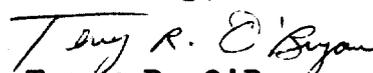
All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should 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
Risk Analysis Branch

Enclosure

12990 A



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Triage of 8(e) Submissions

Date sent to triage: JAN 11 1995

NON-CAP

CAP

Submission number: 12990A

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

For Contractor Use Only

entire document 0 1 2 pages 1 pages 1,2

Notes:

Contractor reviewer: FOR Date: 11/7/94

CECATS/TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA: Submission # 8EHQ-0494-12990 SEQ. # A

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: 639 REFER TO CHEMICAL SCREENING

0678 CAP NOTICE

SUB. DATE: 04/14/94 OTS DATE: 04/18/94 CSRAD DATE: 06/01/94

CHEMICAL NAME: _____ CAS# 3385-61-3

1007 VOLUNTARY ACTIONS:

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

INFORMATION TYPE:	P F C	INFORMATION TYPE:	P F C
0201 ONCO (HUMAN)	01 02 04	0216 EPI/CLIN	01 02 04
0202 ONCO (ANIMAL)	01 02 04	0217 HUMAN EXPOS (PROD CONTAM)	01 02 04
0203 CELL TRANS (IN VITRO)	01 02 04	0218 HUMAN EXPOS (ACCIDENTAL)	01 02 04
0204 MUTA (IN VITRO)	01 02 04	0219 HUMAN EXPOS (MONITORING)	01 02 04
0205 MUTA (IN VIVO)	01 02 04	0220 ECO/AQUA TOX	01 02 04
0206 REPRO/TERATO (HUMAN)	01 02 04	0221 ENV. OCCUR/REL/FATE	01 02 04
0207 REPRO/TERATO (ANIMAL)	01 02 04	0222 EMER INCI OF ENV CONTAM	01 02 04
0208 NEURO (HUMAN)	01 02 04	0223 RESPONSE REQEST DELAY	01 02 04
0209 NEURO (ANIMAL)	01 02 04	0224 PROD/COMP/CHEM ID	01 02 04
0210 ACUTE TOX. (HUMAN)	01 02 04	0225 REPORTING RATIONALE	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
		0241 IMMUNO (ANIMAL)	01 02 04
		0242 IMMUNO (HUMAN)	01 02 04
		0243 CHEM/PHYS PROP	01 02 04
		0244 CLASTO (IN VITRO)	01 02 04
		0245 CLASTO (ANIMAL)	01 02 04
		0246 CLASTO (HUMAN)	01 02 04
		0247 DNA DAM/REPAIR	01 02 04
		0248 PROD/USE/PROC	01 02 04
		0251 MSDS	01 02 04
		0259 OTHER	01 02 04

TRIAGE DATA: NON-CBI INVENTORY

YES (CONTINUE)

NO (DROP)

DETERMINE

REFER:

ONGOING REVIEW

YES (DROP/REFER)

NO (CONTINUE)

SPECIES: GP, RAT, mvs

TOXICOLOGICAL CONCERN: LOW, MED, HIGH

USE: Inter Mediate

PRODUCTION:

COMMENTS: Non-Cat

> <ID NUMBER>
8(e)-12990A

> <TOX CONCERN>
H/L

> <COMMENT>

ACUTE ORAL TOXICITY IN RATS IS OF LOW CONCERN BASED ON AN APPROXIMATE LD50 OF 3200 MG/KG. DOSAGE TO 20 ANIMALS WAS IN THE RANGE OF 200 MG/KG TO 3200 MG/KG. CLINICAL SIGNS INCLUDED WEAKNESS, PROSTRATION, DECREASED RESPIRATION, AND LACK OF REFLEXES.

ACUTE ORAL TOXICITY IN MICE IS OF LOW CONCERN BASED ON AN APPROXIMATE LD50 OF 2260 MG/KG. DOSAGE TO 20 ANIMALS WAS IN THE RANGE OF 200 MG/KG TO 3200 MG/KG. CLINICAL SIGNS INCLUDED WEAKNESS, PROSTRATION, COARSE TREMORS, CONVULSIVELIKE MOVEMENTS, DECREASED RESPIRATION, AND LACK OF REFLEXES.

PRIMARY DERMAL IRRITATION IN 3 GUINEA PIGS IS OF HIGH CONCERN. DOSAGE OF 5 TO 20 ML/KG RESULTED IN MODERATE TO GROSS EDEMA, SLIGHT ERYTHEMA, AND SCATTERED NECROSIS AT 24 HOURS; ESCHAR AT 1 WEEK; AND HEAVY SCARRING, SMALL SECONDARY ESCHARS, AND COMPLETE ALOPECIA AT 2 WEEKS. THERE WAS NO MORTALITY. DATA ON TWO INTRAPERITONEAL TESTS WERE INCLUDED. A TEST IN 20 RATS AT DOSAGES FROM 200 MG/KG TO 3200 MG/KG RESULTED IN AN APPROXIMATE LD50 OF 800 MG/KG, WITH WEAKNESS, PROSTRATION, COARSE TREMORS, CONVULSIONS, DECREASED RESPIRATION, LACK OF REFLEXES, AND BLOODY URINE. A TEST IN 20 MICE AT DOSAGES BETWEEN 200 MG/KG TO 3200 MG/KG RESULTED IN AN APPROXIMATE LD50 OF 476 MG/KG, WITH WEAKNESS, PROSTRATION, COARSE TREMORS, CONVULSIONS, LACK OF REFLEXES, AND BLOODY URINE.