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		TSCA Section	8ECP
Submitting Organization	ELF ATOCHEM NORTH AMERICA INC		
Contractor	BIO/DYNAMICS INC		
Document Title	INITIAL SUBMISSION: PRIMARY DERMAL IRRITATION STUDY OF DIBUTYL TIN MALEATE IN RABBITS WITH COVER LETTER DATED 08/13/92		
Chemical Category	DIBUTYL TIN MALEATE		

8(e)

# CAP

(COMPLIANCE AUDIT PROGRAM)

## TSCA CONFIDENTIAL BUSINESS INFORMATION

ORIGINAL - DCO (Jeff/Eric)  
COPY # 1 - CBIC  
COPY # 2 - Scott Sherlock

## COMPANY SANITIZED

ORIGINAL - PINS  
COPY # 1 - PINS  
COPY # 2 - ECAD

## CONTAINS NO CBI

ORIGINAL - PINS  
COPY # 1 - PINS  
COPY # 2 - ECAD (Dave Williams)

**elf atochem**

**ATO**

8EHQ-0892-11083  
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ELF ATOCHEM NORTH AMERICA, INC.  
900 First Avenue, P.O. Box 1536  
King of Prussia, PA 19406-0018

Tel: 215-337-6500

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August 13, 1992

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8EHQ-92-11083  
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Office of Toxic Substances  
U.S. Environmental Protection Agency  
401 M St., S.W.  
Washington, D.C. 20460



88920009366

Attn: Section 8(e) Coordinator (CAP Agreement)

RE: Report Submitted Pursuant to the TSCA Section 8(e)  
Compliance Audit Program

CAP Identification Number: 8ECAP-0026

Dear Sir/Madam:

Pursuant to the Toxic Substances Control Act (TSCA) Section 8(e) Compliance Audit Program and the Agreement for TSCA Section 8(e) Compliance Audit Program (CAP Agreement) executed by Elf Atochem North America Inc. (Atochem) and Environmental Protection Agency (EPA), Atochem is submitting the enclosed final report on a study to establish skin irritation potential in rabbits to the EPA. This study does not involve effects in humans.

Nothing in this letter or the enclosed study is considered confidential business information of Atochem.

The enclosed study provides information on the chemical dibutyltin maleate. Its exact chemical name is 1,3,2-dioxastannepin-4,7-dione,2,2-dibutyl stannane and its CAS number is 78-04-6.

The title of the enclosed study report is Primary Dermal Irritation Study in Rabbits. This report consists of two studies. The following is a summary of the adverse effects observed in the skin irritation study with dibutyltin maleate.

Application of one-half (0.5) gram of dibutyltin maleate to the intact skin of a group of six New Zealand albino rabbits for 4 hours was corrosive to rabbit skin.

TSCA CAP  
Dibutyltin Maleate  
August 13, 1992  
Page Two

To our knowledge, Attochem has not previously submitted any TSCA Section 8(e) notices or premanufacture notifications on the subject chemical.

Further questions regarding this submission may be directed to me at 215 337-6892.

Sincerely,

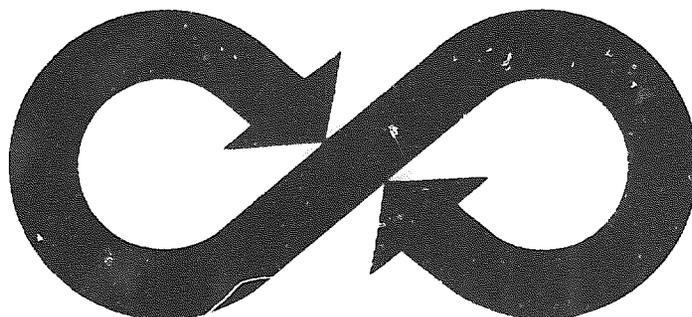


C.H. Farr, PhD, DABT  
Manager, Product Safety  
and Toxicology

Enclosures

TR 91-809

"Contains NO CBI"  
"Contains NO Cl."



# Bio/dynamics Inc.

Department of Toxicology

PROJECT NO.: 4651-87

PRIMARY DERMAL IRRITATION STUDY IN RABBITS

TEST MATERIAL: Thermolite\* 13 and Thermolite\* 813

Submitted to: M&T Chemicals, Inc.  
P.O. Box 1104  
Rahway, New Jersey 07065

Attn: Mr. Arthur Sheldon

Date: February 12, 1988

CAS T-13: 78-04-6  
T-813: 1609-18-2

## I. INTRODUCTION

This study was conducted for M&T Chemicals, Inc. in order to evaluate and compare the primary dermal irritation of Thermolite\* 13 and Thermolite\* 813 in rabbits. The study was performed at Bio/dynamics, Inc., P.O. Box 2360, Mettlers Road, East Millstone, New Jersey 08875.

The procedures used followed the method described in: TSCA (Toxic Substances Control Act): Guidelines, Office of Toxic Substances, Office of Pesticide and Toxic Substances, United States Environmental Protection Agency, September 1985, Acute Exposure, Primary Dermal Irritation.

This report has been reviewed by the Quality Assurance Unit of Bio/dynamics, Inc. to assure its conformance with the protocol and raw data. All raw data, the original study protocol and final report will be retained on file in the Bio/dynamics Archives.

## II. DATES OF STUDY

Animal Receipt:	November 9, 1987
Initiation (Dosing):	December 14, 1987
Termination (Last Observation):	December 28, 1987

## III. STUDY PERSONNEL

Study Director:	Carol S. Auletta, B.A., D.A.B.T.
Laboratory Supervisor:	Janet E. Trimmer, A.A.S., AALAS R.L.A.T.
Technician-in-Charge:	Brian Luke, B.A., AALAS R.L.A.T.
Study Monitor (Report Preparation):	Sherry Whitney, B.S.

## IV. MATERIALS

A. <u>Test Animals:</u>	Albino Rabbits
1. Breed:	New Zealand White
a. Reason for Selection:	Standard laboratory animal for dermal irritation studies. The New Zealand White breed was used because of its availability and because of the existing historical data base for comparative evaluation.
b. Supplier:	Hazleton-Dutchland, Inc. Denver, Pennsylvania

IV. MATERIALS (cont.)

A. Test Animals (cont.):

2. Number: Six (2 males, 4 females)
3. Age: Young adults (at least 8 weeks old at study initiation).
4. Equilibration Period: 35 days
- Observations: All animals were checked for viability twice daily. Prior to assignment to study all animals were examined to ascertain suitability for study.
5. Husbandry: Currently acceptable practices of good animal husbandry were followed, e.g., Guide for the Care and Use of Laboratory Animals; DHEW Publication No. (NIH) 78-23 Revised 1978.
- a. Housing: Individually housed
- b. Cages: Suspended, stainless steel
- c. Environmental Conditions:
1. Temperature: 60-70°F is considered an acceptable temperature range for rabbits; room temperature was monitored and recorded twice daily and maintained within this range to the maximum extent possible.
  2. Humidity: 30-70% is considered an acceptable humidity range for rabbits; room humidity was monitored and recorded daily and maintained within this range to the maximum extent possible.
  3. Light Cycle: 12 hours light, 12 hours dark (controlled by an automatic timer).
- d. Food: Lab Rabbit Chow HF (Purina #5326), ad libitum.
- e. Water: Automatic watering system, ad libitum. Municipal water supply (Elizabethtown Water Co.).

IV. MATERIALS (cont.)A. Test Animals (cont.):

## 5. Husbandry (cont.):

## f. Contaminants:

There were no known contaminants reasonably expected to be found in food or water which would interfere with the results of this study.

## 6. Identification:

Each animal was identified with a monel ear tag, bearing a unique number, prior to testing.

## 7. Selection:

Animals were randomly placed in cages upon receipt, and were placed on study as available at the time of study initiation. Animals considered unsuitable for study because of poor health, unacceptable skin, or outlying body weights were excluded from selection.

B.1. Test Material:

Thermolite\* 13

Lot/Batch No.:

KYDEV-012K

Description:

White powder

Date of Receipt:

November 20, 1987

Received from:

M&amp;T Chemicals, Inc.

Storage:

Room temperature

2. Test Material:

Thermolite\* 813

Lot/Batch No.:

FYRCV-7K

Description:

White powder

Date of Receipt:

November 20, 1987

Received from:

M&amp;T Chemicals, Inc.

Storage:

Room temperature

## V. METHODS

### A. Duration of Study:

Single 4-hour exposure followed by a 3 to 14 day observation period.

### B. Route of Administration:

Dermal, to the clipped skin of the back.

### C. Justification for Route of Administration:

The study was intended to provide information on the health hazards likely to arise from a short term accidental exposure to the test material by the dermal route.

### D. Preparation of Animals:

#### 1. Clipping:

On the day before dosing, the hair of each rabbit was closely clipped with an electric clipper, so as to expose the back from the scapular to the lumbar region. Test sites were re-clipped as necessary for dermal evaluations.

#### 2. Abrasions:

No abrasions were made.

### E. Preparation of Test Materials:

The test materials were administered as received; no preparation was necessary.

### F. Administration of Test Materials:

There were two test sites on the back of each animal, one on either side of the spinal column; Thermolite\* 813 was applied to the right side and Thermolite\* 13 was applied to the left side. Five-tenths grams (0.5 gm) of the appropriate test material, moistened with 0.5 ml of physiological saline, was applied beneath a surgical gauze square, 1"x1", placed directly on the test site and held in place with tape. Gauze was then wrapped around the animal and secured with tape to keep the test material in contact with the skin without undue pressure. Elizabethan collars were then placed on the animals prior to or at the time of dosing to prevent disruption of the wrappings and ingestion of the test material.

Following approximately 4 hours of exposure, the wrappings and gauze squares were removed and the test sites gently wiped free of excess test material with gauze and castile soap. After approximately 30 minutes, dermal observations were made.

VI. EXPERIMENTAL EVALUATION (In-Life)

A. Viability Check:

Twice Daily

B. Evaluation of Skin Irritation:

1. Intervals:

Approximately 30 minutes and 24, 48 and 72 hours and 7, 10 and 14 days after removal of the wrappings or until no signs of irritation were present.

2. Methods:

At each interval all sites were evaluated for erythema and edema or other evidence of dermal irritation according to the Draize scoring system (presented in Appendix A). The most severely affected area was scored. Adjacent areas of untreated skin were used for comparison. Special notation was made of necrosis, eschar, or other evidence of irreversible alteration of tissue structure. Any abnormal pharmacologic or toxic signs were also noted.

VII. RESULTS AND DISCUSSION

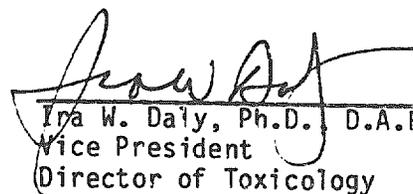
Dermal observations are presented in Table I; the scoring system used is presented in Appendix A.

Thermolite\* 813 was non-irritating to the skin, while Thermolite\* 13 produced moderate to severe dermal irritation. No irritation was seen at sites treated with Thermolite\* 813. All six animals exhibited well-defined erythema, generally with slight edema, within 24 hours after treatment with Thermolite\* 13. Erythema persisted through study termination (Day 14) in all animals. No significant change in severity was apparent in three animals. However, by Day 7 or 10, two animals developed necrosis which persisted through study termination, and one animal exhibited moderate to severe erythema with edema on Days 10 and 14.



Carol S. Auletta, B.A., D.A.B.T.  
Study Director  
Associate Director of Toxicology

2/12/88  
Date



Ira W. Daly, Ph.D., D.A.B.T.  
Vice President  
Director of Toxicology

2/12/88  
Date

TABLE I  
PRIMARY DERMAL IRRITATION STUDY IN RABBITS  
TEST MATERIAL: Thermolite\* 13  
INDIVIDUAL DERMAL IRRITATION SCORES<sup>a</sup>

Time Interval	Observations	Animal Number and Sex					
		4458F	4460F	4472F	4473M	4480F	4487M
<u>0.5 Hrs</u>	ER	1	2	2	1	1	1
	ED	0	0	1	0	0	0
	Other	-	-	-	-	-	-
<u>24 Hrs</u>	ER	2	2	2	2	2	2
	ED	2	1	2	2	0	2
	Other	-	-	-	-	-	-
<u>48 Hrs</u>	ER	2	2	2	2	0	2
	ED	1	0	2	2	0	2
	Other	-	-	-	-	-	-
<u>72 Hrs</u>	ER	1	1	1	2	1	2
	ED	1	0	0	1	0	1
	Other	-	-	-	-	-	-
<u>Day 7</u>	ER	1	2	2	4	2	2
	ED	0	0	0	1	0	0
	Other	-	-	D	N	-	-
<u>Day 10</u>	ER	2	2	4	4	2	3
	ED	0	0	1	1	0	1
	Other	-	-	S,D	N	D	-
<u>Day 14</u>	ER	2	2	4	4	2	3
	ED	0	0	1	2	0	2
	Other	-	D	S,D	N	D	D

<sup>a</sup>Scored using scale presented in Appendix A.  
M-Male; F-Female; ER-Erythema; ED-Edema; D-Desquamation; N-Necrosis;  
S-Superficial Necrosis.

TABLE I (cont.)  
PRIMARY DERMAL IRRITATION STUDY IN RABBITS  
TEST MATERIAL: Thermolite\* 813  
INDIVIDUAL DERMAL IRRITATION SCORES<sup>a</sup>

Time Interval	Observations	Animal Number and Sex					
		<u>4458F</u>	<u>4460F</u>	<u>4472F</u>	<u>4473M</u>	<u>4480F</u>	<u>4487M</u>
<u>0.5 Hrs</u>	ER	0	0	0	0	0	0
	ED	0	0	0	0	0	0
	Other	-	-	-	-	-	-
<u>24 Hrs</u>	ER	0	0	0	0	0	0
	ED	0	0	0	0	0	0
	Other	-	-	-	-	-	-
<u>48 Hrs</u>	ER	0	0	0	0	0	0
	ED	0	0	0	0	0	0
	Other	-	-	-	-	-	-
<u>72 Hrs</u>	ER	0	0	0	0	0	0
	ED	0	0	0	0	0	0
	Other	-	-	-	-	-	-

<sup>a</sup>Scored using scale presented in Appendix A.  
M-Male; F-Female; ER-Erythema; ED-Edema.

APPENDIX A

DRAIZE<sup>1</sup> EVALUATION OF DERMAL IRRITATION

Dermal Observations

Erythema and Eschar Formation (Most severely affected area graded):

No erythema.....	0
Very slight erythema (barely perceptible).....	1
Well-defined erythema.....	2
Moderate to severe erythema.....	3
Severe erythema (beet redness).....	4
Eschar formation.....	4E
Necrosis.....	4N
Superficial necrosis.....	4S

Edema Formation (Most severely affected area graded):

No edema.....	0
Very slight edema (barely perceptible).....	1
Slight edema (edges of area well-defined by definite raising).....	2
Moderate edema (raised approximately 1 mm).....	3
Severe edema (raised more than 1 mm and extending beyond area of exposure).....	4

<sup>1</sup>Draize, J.H. 1959. The Appraisal of Chemicals in Foods, Drugs, and Cosmetics, p. 48. Association of Food and Drug Officials of the United States, Austin, Texas.

Appendix B

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Quality Assurance Statement

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Listed below are dates that this study was inspected by the Quality Assurance Unit of Bio/dynamics, Inc. and the dates findings were reported to the Study Director and Management.

<u>Date(s) of Inspection</u>	<u>Reported to Study Director</u>	<u>Reported to Management</u>
12/16/87 2/9/88	12/22/87 2/12/88	12/23/87 and 12/24/87 2/12/88 and 2/15/88

William M. Harrison  
William M. Harrison, B.S.  
Supervisor of Quality Assurance

2/15/88  
Date

Appendix C

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Compliance Statement

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To the best of our knowledge, the study (Bio/dynamics Project No.: 4651-87) was conducted in general conformance with the Environmental Protection Agency TSCA Good Laboratory Practice Standards, 40 CFR Part 792. Test substance characterization and stability data remains the responsibility of the sponsor.

*Donna Z Blaszyk*  
For: Carol S. Auletta, B.A., D.A.B.T.  
Study Director  
Associate Director of Toxicology

2/15/88  
Date

### CERTIFICATE OF AUTHENTICITY

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