HAZLETON LABORATORIES AMERICA, INC.
Chemical & BioMedical Sciences Division
3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

FINAL REPORT

ROGER G. PERKINS
MINNESOTA MINING & MANUFACTURING COMPANY
TOXICOLOGY SERVICES
ST. PAUL, MN 55101

SAMPLE NUMBER: 70905761
SAMPLE ENTERED: 09/25/87
REPORT PRINTED: 01/21/88

SAMPLE: T-4102

PURCHASE ORDER NUMBER: T837389-410 754

ENCLOSED: PRIMARY DERMAL IRRITATION/CORROSION STUDY IN RABBITS
(OECD GUIDELINES)

- Key Personnel
- Method
- Summary
- References
- Raw Data Appendix

SIGNED: Steven M. Glaza
STEVEN M. GLAZA
STUDY DIRECTOR
ACUTE TOXICOLOGY

DATE 1-21-88

SAMPLE NUMBER: 70905763

SAMPLE: T-4102

KEY PERSONNEL

Acute Toxicology

Steven M. Glaza
Study Director

Calvin L. Horton
Group Leader
Support Services

Sharen L. Howery
Report Coordinator

Quality Assurance

Debra Curley Arndt
Manager

Laboratory Animal Veterinarian

Cindy J. Cary, DVM
Diplomate, ACLAM

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OECD DERMAL IRRITATION

Objective: To determine the relative level of primary skin irritation/corrosion of a test substance on rabbits under semioccluded conditions according to the Organisation for Economic Cooperation and Development's Guidelines for Testing Chemicals.

Test Material: T-4102

Physical Description:	Dark amber liquid
Purity and Stability:	Sponsor assumes responsibility for purity and stability determinations.
Storage and Retention:	The test material was stored at room temperature. Any unused material will be discarded according to HLA Standard Operating Procedure.
Safety Precautions:	Normal handling procedures were used according to HLA Standard Operating Procedure.

Test Animal: Young adult rabbits of the New Zealand White strain were procured, maintained individually in screen-bottom cages in temperature- and humidity-controlled quarters, provided access to water ad libitum and a measured amount of Purina High Fiber Rabbit Chow, and held for an acclimation period of at least 7 days. Animal husbandry and housing at HLA comply with standards outlined in the "Guide for the Care and Use of Laboratory Animals". If variations from the prescribed environmental conditions existed, they were documented and considered to have no effect on the study outcome. No contaminants were expected to have been present in the feed or water which would have interfered with or affected the results of the study.

Three acclimated animals, weighing from 2202 to 2325 g, were chosen at random for the test, treated, and maintained during the observation period as specified for the acclimation period. Test animals were identified by animal number and corresponding ear tag. Approximately twenty-four hours before treatment the hair was clipped from the back of each animal.

Reason for Species Selection: Historically, the New Zealand White albino rabbit has been the animal of choice for evaluating the effect of chemicals on the skin.

Preparation and Administration of Test Material: The sample was dosed as received. The pH was determined to be 9.1.

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OECD DERMAL IRRITATION (CONTINUED)

Treatment: The test material was applied to the intact skin of each rabbit in the amount of 0.5 ml. The treated area was covered with a 2.5 x 2.5-cm gauze patch secured with paper tape and overwrapped with Saran Wrap and Elastoplast tape to provide a semiocclusive dressing. Collars were applied to restrain the test animals for the 4-hour exposure period.

Reason for Route of Administration: Historically, the route of choice based on the method of Draize.

Observations: After the exposure period, the patches were removed. The test sites were washed using lukewarm tap water and disposable paper towels. The test material was removed from the test sites as thoroughly as possible without irritating the skin. Thirty minutes following removal of the test material, the degree of erythema and edema was read according to the Draize technique. Subsequent examinations were made at 24, 48 and 72 hours after patch removal.

Individual body weights were taken just prior to study initiation.

Pathology: At study termination all animals were euthanatized and discarded.

Statistical Methods: Other than average dermal irritation scores, no other statistical method was performed.

Location of Raw Data and Final Report: The raw data and a copy of the final report will be retained in the archives of HLA.

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SAMPLE: T-4102

OECD DERMAL IRRITATION (CONTINUED)

SUMMARY

Test Animal: Albino Rabbits - New Zealand White
Source: Hazleton Research Products, Inc., Denver PA
Date Animals Received: 10/20/87

Date Test Started: 11/02/87 Date Test Completed: 11/05/87

INDIVIDUAL DERMAL IRRITATION SCORES

Animal Number	Sex	Erythema Hours 4	24	48	72	Edema Hours 4	24	48	72
F20309	M	1	1	1	1	1	0	1	0
F20349	F	0	0	0	0	0	0	0	0
F20311	M	0	1	1	1	0	0	0	0
Mean		0.3	0.7	0.7	0.7	0.3	0.0	0.3	0.0

PRIMARY DERMAL IRRITATION SCORES *

Observation Period	3 Rabbit Mean
4 Hours:	0.7
24 Hours:	0.7
48 Hours:	1.0
72 Hours:	0.7

* The Primary Dermal Irritation Score is the total dermal irritation score for all the animals (erythema and edema) divided by the number of test sites (3) at each observation period.

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OECD DERMAL IRRITATION (CONTINUED)

References:

1. Organisation for Economic Cooperation and Development's Guidelines for Testing of Chemicals, Section 404, Acute Dermal Irritation/ Corrosion, adopted May 12, 1981.

2. OECD's Principles of Good Laboratory Practice, Annex 2, C(81)30 (Final)

3. Draize, J.H., "Appraisal of the Safety of Chemicals in Foods, Drugs, and Cosmetics - Dermal Toxicity", Association of Food and Drug Officials of the U.S., pp. 46-59 (1975).

4. NIH Publication No. 86-23 (revised 1985).

HLA No. 70905763

Personnel Signature Sheet
Acute Toxicology

Name	Job Title	Signature	Initials
Becky Beckwith	Sr. Lab. Animal Asst.	Becky Beckwith	BB
Steve Beloungy	Lab. Animal Asst.	Steve D Beloungy	SB
Ken Bridges	Sr. Lab. Animal Asst.	Ken Bridges	KB
Pat Crary	Sr. Lab. Animal Asst.	Pat Crary	PC
Shane Eith	Lab Animal Asst.	Shane Eith	SE
Shawn Frazier	Lab Animal Asst.	Shawn Frazier	SF
Steven M. Glaza	Group Leader	Steven M. Glaza	SG
Molly Hahn	Admin. Clerk	Molly Hahn	MH
Kevin Hamilton	Lab. Animal Asst.	Kevin Hamilton	KH
Jeff Hicks	Sr. Lab. Animal Asst.	Jeff Hicks	JH
Calvin Horton	Group Leader	Calvin D. Horton	CH
Sharen L. Howery	Administrative Asst.	Sharen L. Howery	SLH
Gregory Johnson	Lab. Animal Tech.	Gregory Johnson	GJ
Paul Krebs	Lab. Animal Asst.	Paul D Krebs	P.K.
Wayne Madison	Section Supervisor	Wayne A. Madison	WAM
Scott McConnell	Lab. Animal Tech.	Scott McConnell	SMcC
Shelley McConnell	Lab. Animal Tech.	Shelley McConnell	SMC
Dawn Conant	Sr. Lab. Animal Asst.	Dawn Conant	DC
Don Mavis	Lab. Animal Asst.	Donald W Mavis	DM
Robin Olson	Lab. Animal Asst.	Robin Olson	RO
Patricia Padgham	Team Leader	Patricia Padgham	PP
Joseph J. Daun	Lab. Animal Asst.	Joseph J Daun	JD
Michael Patzka	Lab. Animal Asst.	Michael Patzka	MP
John Paulson	Sr. Lab. Animal Asst.	John Paulson	JW
Jane Polnow	Lab. Animal Tech.	Jane Polnow	JP
Dennis B. Steiner	Lab. Animal Tech.	Dennis B Steiner	DS
Michael Thesing	Lab. Animal Asst.	Michael Thesing	MT
Paula G. Vangen	Administrative Asst.	Paula G Vangen	PGV
Albert Olson	Manpower	Albert J. Olson	AO
Jim Jirschele	LTE	Jim Jirschele	JJ
Ben Haley	Sr. Lab Animal Asst.	Ben Haley	BH
Eileen M. McConnell	Admin. Clerk	Eileen M McConnell	EMM
Annette R. Turner	Manpower	Annette R Turner	ART

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DERMAL IRRITATION/BODY WEIGHT RECORD

(4-Hour Exposure)

Study Title: Primary Dermal Irritation
Test Material: T-4102
Physical Description: amber liquid (dark) pH Result: 9.1 with Hanna Meter No. 6890
Dose: 0.5 mL Per Site NA Moistened with 0.9% Saline
Date Animals Received: 10-20-87 Source/Strain/Species: Hazleton Research Products/New Zealand White/Rabbit Room Number: 161
Technician/Date Animals Clipped: KB / 11/1/87 Initiated by: MP Date: 11-2-87
Skin Preparation: ✓ Intact NA Abraded (with a clipper blade) Reviewed by: pgr Date: 11/2/87

Animal Number/Sex	♂ F2-0309	♀ F2-0349	♂ F2-0311				Technician	Recorded by	1987 Date	Scale used: KTRON
Initial Body Weight (g)	2325	2202	2238				KB	KB	11/2	15019
7-Day Body Weight (g)										
14-Day Body Weight (g)										
21-Day Body Weight (g)										
Observation Period										Dermal Irritation Score
4 Hours Erythema	1	0	0				MP	JH	11-2	✓ slw 11-9-87
4 Hours Edema	1	0	0							0.7 MP 11-5-87
24 Hours Erythema	1	0	1				MP	MP	11-3	✓ slw 11-9-87
24 Hours Edema	0	0	0							0.7 MP 11-5-87
48 Hours Erythema	1	0	1				↓	JH	11-4	✓ slw 11-9-87
48 Hours Edema	1	0	0							1.0 MP 11-5-87
72 Hours Erythema	1	0	1				KB	KB	11/5	✓ slw 11-9-87
72 Hours Edema	0	0	0							0.7 MP 11-5-87
96 Hours Erythema										
96 Hours Edema										
7 Days Erythema										
7 Days Edema										
14 Days Erythema										
14 Days Edema										
21 Days Erythema										
21 Days Edema										

NA = Not applicable.
A = Subcutaneous hemorrhage.
B = Blanching.
N = Possible necrotic area.
U = Unable to determine pH.

All animals appeared normal just prior to dosing. Technician MP Date 11-2-87
Surviving animals designated for sacrifice and discard. Technician ↓ Date 11-6-87

Data reviewed by: [illegible] Date: 12-6-87

(1) WRONG DATE ENTERED KB 11/2/87

(10/61/vml)

T-5909

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PRIMARY DERMAL IRRITATION SCORING SCALE (DRAIZE[1] TECHNIQUE)

(1) Erythema and Eschar Formation

No erythema	0
Very slight erythema (barely perceptible)	1
Well-defined erythema	2
Moderate to severe erythema	3
Severe erythema (beet redness) to slight eschar formation (injuries in depth)	4
Highest possible erythema score	4

(2) Edema Formation

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
Highest possible edema score	4

[1] Draize, J. H., "Appraisal of the Safety of Chemicals in Foods, Drugs, and Cosmetics - Dermal Toxicity." Association of Food and Drug and Drug Officials of the U.S., pp. 46-59 (1975).

(00261/vmt)