9-21-91

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

SEP 16 1991

MEMORANDUM:

Subject: EPA File Symbol/EPA Reg. No.:1021-1600
MGK Insect Repellent Spray 2559

From: Olga Odiott, Biologist
Precautionary Review Section
Registration Support Branch
Registration Division (H7505C)

To: Phil Hutton, PM 18
Insecticide-Rodenticide Branch
Registration Division (H7505C)

Thru: Thomas C. Ellwanger, Section Head
Precautionary Review Section
Registration Support Branch
Registration Division (H7505C)

Applicant: McLaughlin Gormley King Co.

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
N,N-diethyl-m-toluamide	23.75%
other isomers	1.25%
N-octyl bicycloheptene dicarboximide	5.00%
Di-n-propylisocinchomeronate	2.50%
Inert Ingredient(s):	67.50%
Total:	100.00%

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BACKGROUND

The registrant submitted acute oral, acute dermal, acute inhalation, primary eye irritation, skin irritation and skin sensitization studies to support registration of 1021-1600 . The studies were conducted at Biosearch Laboratories Inc. MRID No. 418265-01 through 418265-06.

RECOMMENDATION

RSB/PRS finds the acute oral, acute inhalation and eye irritation studies acceptable to support registration of 1021-1600.

The acute oral and acute inhalation studies are classified as core minimum data because individual animal observations were not included in the test report. The acute inhalation study was classified as Cat. III based on the gravimetric determination of chamber concentration. If the registrant wants the reported analytical concentration (7.81 mg/l) considered as reference for classification, additional information on how this concentration was determined must be submitted.

The acute dermal study is classified as supplementary because the in-life phase of the study was not audited by the Laboratory Quality Assurance Unit.

The skin irritation study is classified as supplementary due to the fact that an animal was exposed to more than one test material simultaneously and also because the dosage was not specified. The use of individual animals for simultaneous testing of different test materials was not described in the procedure or submitted in a protocol. All conditions under which the animals are tested should be included in the test report, especially when it can interfere with the outcome of a particular study. If the registrant wants the study reconsidered, a detailed explanation of the conditions under which the animals were tested must be provided.

The skin sensitization study is classified as supplementary data because the amount of test material used for the induction and challenge treatments was not specified. This data is necessary for a complete evaluation of the study.

LABELING (Further revisions may be needed upon submittance of outstanding data)

Based on the eye irritation study, the signal word for this product should be changed to DANGER.

The precautionary statements should read as follows:

"Corrosive. Causes irreversible eye damage. Due to corrosive nature may be harmful or fatal if swallowed. Harmful if ~~absorbed through skin or~~ inhaled. Do not get in eyes or on clothing. Avoid contact E

with skin. Avoid breathing spray mist. Wear safety glasses. Wash throughly with soap and water after handling. Remove contaminated clothing and wash before reuse."

The Statements of Practical treatment should read as follows:

"If in eyes: Flush with plenty of water. Call a physician.
If swallowed: Call a physician or Poison Control Center. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available drink large quantities of water. Avoid alcohol.
~~If on skin: Wash with plenty of soap and water. Get medical attention.~~ E
If inhaled: Remove victim to fresh air."

The Disposal statement should read: "Securely wrap original container in several layers of newspaper and discard in trash."

Note to PM:

This product fits the criteria for restricted use classification due to eye toxicity. PM should decide if alternative label language is sufficient to offset this hazard and offset the requirement for restricted use classification."

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DATA REVIEW FOR ACUTE ORAL TOXICITY TESTING (§ 81-1)

Product Manager: 18 **Reviewer:** O. Odiott
MRID No.: 418265-01 **Report Date:** 12/18/90
Testing Facility: Biosearch Incorporated **Report No.** 90-7129A
Author(s): David Gabriel
Species: Sprague -Dawley rat
Age:
Weight: 201- 280 gm
Source: Buckshire Corp., Perkasie, PA 18944
Test Material: MGK Insect Repellent Spray 2559 (non volatiles)
Quality Assurance (40 CFR §160.12): attached

Conclusion:

1. LD_{50} (mg/kg): **Males** = 4.87 g/kg (3.80-6.24)
   Females = 2.67 g/kg (1.92-3.70)
   Combined = 3.87 g/kg (2.99-5.02)
2. **The estimated LD_{50} is**
3. **Toxicity category:** III **Classification:** Core minimum

Procedure (Deviations from §81-1):
Individual animal observations were not included in the test report.

Results:

Dosage	(Number Killed/Number Tested)		
	Males	Females	Combined
1.88 g/kg	0/5	1/5	1/10
3.16 g/kg	0/5	3/5	3/10
3.98 g/kg	1/5	-	1/5
5.00 g/kg	4/5	5/5	9/10

Symptoms & Gross Necropsy Findings:

Hypoactivity, prostration, ruffled fur and coma were observed. At gross necropsy clear/yellow liquid in the stomach, yellow/dark liquid in the lower gastrointestinal tract, ocular staining and spongy/hemorrhagic lungs were observed.

DATA REVIEW FOR ACUTE DERMAL TOXICITY TESTING (§81-2)

Product Manager: 18 **Reviewer:** O. Odiott
MRID No.: 418265-02 **Report Date:** 11/01/90
Testing Laboratory: Biosearch Inc. **Report No.:** 90-7129A
Author(s): David Gabriel
Species: New Zealand white rabbit
Weight: 2.18-2.70 kg
Source: Buckshire Corp. Perkasie, PA
Test Material: MGK Insect Repellent Spray 2559 (non-volatiles)
Quality Assurance (40 CFR §160.12): attached

Summary:

1. LC_{50} (mg/kg): **Males** =
Females =
Combined =

2. **The estimated LD_{50} is**

3. **Tox. Category:** **Classification:** Supplementary

Procedure (Deviation From §81-2):
One animal died. In-life phase of the study was not inspected by the QAU.

Results:

Reported Mortality

DOSAGE	(NUMBER KILLED/NUMBER TESTED)		
	Males	Females	Combined
2.0 g/kg	0/5	1/5	1/10

Symptoms & Gross Necropsy Findings:
Well defined erythema, severe edema, fissuring at the dermal test site, diarrhea, lethargy and decreased defecation were observed. At necropsy, gas, dark liquid and mucus were observed in the lower gastrointestinal tract.

DATA REVIEW FOR ACUTE INHALATION TOXICITY TESTING (§81-3)

Product Manager: 18 **Reviewer:** O. Odiott
MRID No.:418265-03 **Report Date:** 11/14/90
Testing Laboratory: Biosearch Inc. **Report No.:**90-7129A
Author(s): Richard J. Hershman
Species: Sprague-Dawley rat
Weight: 221-295 g
Source: Buckshire Corp. Perkasie, PA
Test Material:MGK Insect Repellent Spray 2559 (non-volatiles)
Quality Assurance (40 CFR §160.12):attached

Summary:

1. LC_{50} (mg/kg): **Males =**
   Females =
   Combined =

2. **The estimated LC_{50} is** . 3.04 mg/l

3. **Mean Concentration:**

4. **Tox. Category:** III **Classification:**Core Minimum

Procedure (Deviation From §81-3):
Individual animal observations were not reported. Method for determining the anlytical concentration (7.81 mg/l) was not explained.

Results:

Reported Mortality

Exposure Concentration	(NUMBER KILLED/NUMBER TESTED)		
	Males	Females	Combined
3.04 mg/l MMAD= 1.82 u	0/5	0/5	0/10

Symptoms & Gross Necropsy Findings:
Hypoactivity, ruffled and oily appearing hair. 4 females exhibited weight loss from day 7-14.

DATA REVIEW FOR ACUTE EYE IRRITATION TESTING (§81-4)

Product Manager: 18
MRID No.: 418265-04
Testing Laboratory: Biosearch Inc.
Author(s): Jennifer Bielucke
Species: New Zealand white rabbit
Sex: not specified
Weight: not specified
Source: Davidson Mill Farm, Jamesburg, NJ
Dosage: 1 second spray from a distance of 10cm
Test Material: MGK Insect Repellent Spray 2559
Quality Assurance (40 CFR §160.12): attached

Reviewer: O. Odiott
Report Date: 10/29/90
Report No.: 90-7129A

Summary:

1. **Toxicity Category:** I

2. **Classification:** Guideline

Procedure (Deviations From §81-4):

Results:

Observations	(number "positive"/number tested)							
	Hour	Days						
	1	1	2	3	4	7	14	21
Cornea Opacity	0/6	6/6	4/6	2/6	2/6	3/6	1/6	1/6
Iris	0/6	0/6	0/6	0/6	0/6	0/6	0/6	0/6
Conjunctivae								
Redness	6/6	6/6	4/6	2/6	1/6	1/6	1/6	0/6
Chemosis	6/6	6/6	6/6	3/6	3/6	2/6	1/6	1/6
Discharge	6/6	4/6	3/6	2/6	1/6	1/6	1/6	1/6
Pannus						2/6	1/6	1/6
Dull cornea		3/6	1/6	0/6	2/6	2/6		
Hazy cornea		6/6	4/6	2/6	2/6	2/6		
Sialodacryoadenitis								1/6

Comments:
0.5% Ophthaine solution was used for local anesthesia of both eyes.

DATA REVIEW FOR SKIN IRRITATION TESTING (§81-5)

Product Manager: 18
MRID No.: 418265-05
Testing Laboratory: Biosearch Inc.
Author(s): Pamela Romanelli
Species: New Zealand white rabbit
Age: not specified
Sex: not specified
Weight: not specified
Dosage: dosage not specified, test substance sprayed for one second from a distance of10 cm, animal data incomplete
Test Material: MGK Insect Repellent Spray 2559
Quality Assurance (40 CFR §160.12): attached

Reviewer: O. Odiott
Report Date: 10/01/90
Report No.: 90-7129A

Summary:

1. **The Primary Irritation Index =**

2. **Toxicity Category:**

3. **Classification:** Supplementary

Procedure (Deviations From §81-5):
Animals exposed to more than one test substance at the same time. Dosage not specified.

Results:
6/7 animals had no signs of erythema or edema 72 hours after treatment. 1/7 animals showed well defined erythema at 48 and 72 hours after treatment. The same animal showed slight edema at 48 hours.

Special Comments:
The laboratory report indicated that for the 1/7 animals that showed irritation at 72 hours, another test article dosed at the same time on that animal may have interfered with the test site.

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DATA REVIEW FOR SKIN SENSITIZATION TESTING (§81-6)

Product Manager: 18
MRID No.: 418265-06
Testing Laboratory: Biosearch Inc.
Author(s): Pamela Romanelli
Species: Hartley guinea pig
Weight: 408-553 gm
Source: Davidson Mill Farm, Jamesburg, NJ
Test Material: MGK Insect Repellent Spray 2559 (non-volatiles)
Positive Control Material: 1-chloro-2,4-dinitrobenzene
Quality Assurance (40 CFR §160.12): attached

Reviewer: O. Odiott
Report Date: 11/08/90
Report No.: 90-7129A

Method: Buehler

Summary:

1. **This Product is / is not a dermal sensitizer.**

2. **Classification:** Supplementary

Procedure (Deviation From §81-6):
Amount of test material used for induction and challenge exposures was not specified.

Results:
The test group (12 male guinea pigs) was exposed for 24 hours to undiluted test material. This treatment was repeated 3 times a week for 3 weeks for a total of 9 induction applications. Induction applications 2-9 were 6 hour wraps. Two weeks after the last application the animals were challenged with a 24 hour application of the test material. 5 naive control animals were treated at this time also.

Upon challenge, irritation was not observed for any of the animals including the naive control group.

The positive control group was treated in a similar manner . Sensitization to the positive control material was demonstrated.