US EPA ARCHIVE DOCUMENT

Atrazine / Review #2 / 12/3/69

Inert ingredient information deleted from pages 2 and 8.

12 pages

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Releasable

December 3, 1969

Mr. Henry S. Bussey, Head
Registration Procedures Section
Pesticides Regulation Division
Agricultural Research Service
U. S. Department of Agriculture
Washington, D. C. 20250

Reg. No. 100-UOA
Referral Date - 11/21/69

Dear Mr. Bussey:

We have reviewed the toxicological data on Aatrex 4L Brand of Atrazine of the above listed Reg. No.

We have no objection to the registration of the product provided the registrant provide us with the following data:

Acute Inhalation in Rats

Sincerely,

Lamar B. Dale, Jr., Ph. D.
Pharmacologist
Division of Pesticide Registration
Office of Product Safety

cc:
PS-10
PS-300
PS-300/THHarris
TOX File
PS-300/LBDale/ccw
12/3/69

LBDale/ccw
12/2/69

AATREX 4L BRAND OF ATRAZINE

Active Ingredient	:	Atrazine technical 44.3%
Inert Ingredients	:	[redacted]
Use	:	Agricultural Weed Control

Inert ingredient information deleted.

DATA SUMMARY

Acute Oral Toxicity	:	LD_{50} = 4.7 g/KG
Acute Dermal Toxicity	:	LD_{50} > 10.2 g/KG
Acute Eye Irritation	:	Severly irritating (64.0)

AATREX 4L BRAND OF ATRAZINE

Acute Oral Toxicity (Rat)

Sixty albino rats (30 male, 30 female) of the Charles River strain ranging in body weight from 150-190 gms were divided into six groups of ten animals each (5 male, 5 female) and administered 2.0, 3.0, 4.6, 6.8, 10.2 and 15.4 g/KG of the test material orally by intubation.

Following administration of the test material the rats were housed individually and observed for the succeeding 14 days for signs of toxicity and/or mortality. Initial and final body weights, reactions displayed and mortalities were recorded. Autopsies on all animals were carried out at the termination of the experiment.

Signs of toxicity included hypoactivity, muscular weakness, ruffed fur, and dyspnea.

The acute oral LD_{50} for male albino rats was found to be 4.6 g/KG with 95% confidence limits of 3.0-7.1 g/KG.

The acute oral LD_{50} for female albino rats was found to be 5.5 g/KG with 95% confidence limits of 3.6-8.4 g/KG.

The combined acute oral LD_{50} for male and female albino rats was found to be 4.7 g/KG with 95% confidence limits of 3.4-6.4 g/KG.

Acute Dermal Toxicity (Rabbit)

Eight albino rabbits (4 male, 4 female) were divided into two groups of four rabbits each (2 male, 2 female) and received skin applications of undiluted test material at dose levels of 6.8 and 10.2 g/KG to the unbraded skin of

their shaved backs. After each application, the exposure site was covered by wrapping the trunk of the animal with an impervious plastic sheeting which was securely taped in place. To further prevent oral injestion of the test material, each animal was fitted with a light weight flexiable plastic collar which was worn throughout the observation period.

The test material remained in contact with the skin for 24 hours. At the end of this period the plastic sheeting and residual was removed. The exposure sites were examined for local skin reactions and the animals returned to their cages. Observations for mortality, local skin reactions, and behavioral abnormalities were continued for a total of 14 days. Animals which succumbed during the study as well as all surviving animals were autopsied at the end of the observation period.

No untoward behavioral reactions were exhibited by any of the animals. Pale red erythema and a slight to moderate edema of the skin at the application site was noted among animals in both groups at the end of the 24 hour contact period. Within seven days after application these reactions had subsided and dryness and desquamation were noted. The latter reactions continued until the end of the observation period. Necropsy of all animals did not reveal any gross pathologic alterations other than the dermal alterations previously described.

The acute dermal LD_{50} was greater than 10.2 g/KG.

Acute Eye Irritation (Rabbit)

0.1 ml of undiluted test material was instilled into the conjunctival sac of

the right eye of each rabbit of a group of five albino rabbits. The left eye of each animal served as scoring control. One minute, 1, 24, and 72 hours and 7, 10 and 14 days following instillation, the cornea, iris and palpebral conjunctiva were examined individually and graded for irritation and injury according to the method of Draize.

Transient corneal opacity and iridal and conjunctival irritation were noted among all animals within one hour after instillation. Within 7-14 days, the ocular tissues returned to normal. The test material was rated as severely irritating.

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PESTICIDES REGULATION DIVISION
WASHINGTON, D. C. 20250

INTERDEPARTMENTAL COORDINATION OF ACTIVITIES RELATING TO PESTICIDES

Referral of Application for Registration under the Federal Insecticide, Fungicide, and Rodenticide Act

1. DATE OF REFERRAL: 10-17-69 ok of

2. FILE SYMBOL/REGISTRATION No.: 572-R UR

3. DATE OF APPLICATION: 10-3-69

4. NAME & ADDRESS OF APPLICANT OR REGISTRANT

MALLINCKRODT CHEMICAL WORKS
Second & Mallinckrodt Sts
St. Louis, Mo 63160

5. PRODUCT NAME

MO SAN [redacted] Formulation A

6. COMMENTS BY COORDINATING AGENCY

The following supporting data with label and formula on 12% Technical Methyl 2-Chloro-9-Hydroxyfluorene-9- Carboxylate" is transmitted to CPSS for review and retention:

1. See attached Index sheet which includes acute oral, dermal & inhalation toxicity and acute eye irritative potential studies; wildlife studies, fish studies.

A copy of above data, marked "Data Reference [redacted] File" is transmitted to [redacted] with label and formula for review and return with comments.

7. BY (NAME)

8. DATE

9. NAME OF AGENCY

PR USE ONLY

☐ SAFETY - FISH AND WILDLIFE		☐ SAFETY - HUMAN		☐ OTHER:	
INITIALS	DATE	INITIALS	DATE	INITIALS	DATE
COMMENTS		COMMENTS		COMMENTS	

PR FORM 9 - 230
(OCT. 1968)

REPLACES PR FORM 9-290, PR FORM 9-291, & PR FORM 9-230, DEC. 1964, WHICH ARE OBSOLETE.

3722-4R

CONFIDENTIAL

PO-SAN FORMULATION A

Complete Formula

Active Ingredient	W/V
Technical methyl 2-chloro-9-hydroxyfluorene-9-carboxylate	12% .24-.4%
Inert Ingredients	[redacted]
Total	88

PO-SAN FORMUIATION B

Active Ingredient	W/V
Methanolamine salt of 6-hydroxy-3-(2H)-Pyridazinone	23.0
Inert Ingredients	[redacted]
Total	77

(LABEL FOR CONTAINER A)

PO-SAN™
Formulation A

DO NOT REMOVE FROM OUTER CARTON

Active Ingredient	
Technical Methyl 2-Chloro-9-Hydroxyfluorene-9-Carboxylate*	12%
Inert Ingredients	88%

*Equivalent to 8% methyl-2-chloro-9-hydroxyfluorene-9-carboxylate and 4% related products.

WARNING

Keep out of reach of children
Causes eye and skin irritation
Harmful if swallowed
Flammable
Avoid contact with skin, eyes and clothing
Wash thoroughly after handling
Keep away from heat, sparks and open flame
In case of contact, flush skin and eyes with plenty of water; for eyes, get medical attention

(CENTER PANEL)

VOLUME 1 gallon

CODE

PO-SAN™

Brand of
Growth Retardant for Post Emergence
Control of Poa annua.

Formulation A (64 fl. oz.)

Active Ingredient	W/V
Technical Methyl 2-Chloro-9-Hydroxyfluorene-9-Carboxylate*	12%
Inert Ingredients	88%

Contains one pound active ingredient per gallon.

*Equivalent to 8% methyl 2-chloro-9 hydroxyfluorene-9-Carboxylate and 4% Related Products.

Formulation B (64 fl. oz.)

Active Ingredient

Diethanolamine Salt of 6-Hydroxy-3-(2H)-Pyridazinone

Inert Ingredients

Contains 1.9 pounds active ingredient per gallon.

WARNING

Keep out of reach of children

Causes eye and skin irritation

Harmful if swallowed

Flammable

Avoid contact with skin, eyes and clothing

Wash thoroughly after handling

In case of contact flush skin or eyes with plenty of water; for eyes, get medical attention

Keep away from heat, sparks, and open flame

Do not allow animals to graze on treated areas

Do not feed clipping from treated areas to animals

When containers are empty, rinse out and discard immediately. Do not reuse.

(RIGHT PANEL)

WEEDS CONTROLLED

Po-San at the recommended rate provides good selective post-emergence control of seed and folior development of annual bluegrass (Poa annua). Selective growth retardation or kill of chickweed (Stellaria media), dandelion (Taraxacum officinale), knotweed (Polygonum sp) red sorrel (Rumex acetosella), clover, plantain (Plantago lanceolata) and veronica (Veronica serpyllifolia) may also be experienced.

PRODUCT INFORMATION

Po-San is a combination of two specially formulated growth hormones which inhibit 80-100% of Poa annua seed formation and selectively retards folior development of annual bluegrass. It is recommended for use on golf courses, industrial turf and parks.

Po-San works by placing Poa annua under chemical stress condition. Therefore, a temporary chlorosis should occur shortly after application. Normal maintenance practices, particularly irrigation, should be followed.

Po-San leaves no toxic residues in the soil. Overseeding with perennial grasses can be done immediately after treatment as there is no concern for inhibition of germination.

Po-San can be safely used on fairways which are predominantly Poa annua. Reduced Poa annua vigor and cover provides opportunities for promoting the spread of desirable species.

(LEFT PANEL)

DIRECTIONS FOR APPLICATION

For maximum effectiveness PO-SAN must be applied before Poa annua seedheads develop. Apply in early spring after Poa annua begins vigorous growth. For optimum control Po-San must be applied prior to the expected period of maximum Poa annua seed production.

Empty contents of both container A and B into 30-50 gallons of water in a power sprayer. Be sure the sprayer agitator is operating while adding Po-San. Apply the resultant mixture uniformly on an area of one acre (43,560 square feet).

PRECAUTIONS

Do not use on putting green turf.

Po-San should be used only for recommended uses and at the recommended rate.

A boom type sprayer carefully calibrated to deliver the proper volume per acre is recommended. Apply a uniform coverage of Po-San with a minimum of spray overlap.

Use only on well established perennial turf.

Application to turf less than 3 months old may result in injury.

Applications of Po-San during periods of high plant stress--heat, drought or disease--is not recommended.