

US EPA ARCHIVE DOCUMENT

MAY 5 1987



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

006165

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

MAY 5 1987

SUBJECT: EPA File Symbol 54289-E
Degussa Methylisothiocyanate

FROM: Mary L. Waller
Technical Support Section
Fungicide-Herbicide Branch
Registration Division (TS-767C)

MW 5/26/87

TO: Lois M. Rossi, Acting PM 21
Fungicide-Herbicide Branch
Registration Division (TS-767C)

E 5/27/87

APPLICANT: Degussa Corporation
Route 46 at Hollister Road
Teterboro, NJ 07608

ACTIVE INGREDIENT:
Methylisothiocyanate 97%
INERT INGREDIENTS: 3%

BACKGROUND:

The applicant has submitted two acute dermals, an acute oral, an acute inhalation, a primary eye and primary skin irritation study. The studies were conducted by Research and Consulting Company AG. The data Accession Numbers are 264387, 264390, 264386, 264389, and 264385. The method of support was not indicated.

RECOMMENDATION:

FHB/TSS finds the data acceptable to support registration of 54289-E. The signal word is "DANGER" based on all studies except the acute oral toxicity study.

A dermal sensitization study will not be required because of the product's extreme toxicity and the probability that repeated dermal exposure will not occur.

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The registrant should be informed that six is the minimum acceptable number of animals for the primary eye irritation and primary skin irritation studies. However, because of this product's extreme toxicity, the primary eye and primary skin irritation study using three animals will be accepted.

LABELING:

Revise label as follows:

1. Add the word "POISON" (in red) and place it in close proximity to the signal word.
2. Revise Statement of Practical Treatment for oral exposure as follows: "IF SWALLOWED: Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol."
3. Add the following "NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage."
4. Revise "Precautionary Statements" as follows:
"Fatal if inhaled or absorbed through skin. May be fatal if swallowed. Corrosive. Causes irreversible eye damage and skin burns. Wear a mask or pesticide respirator jointly approved by the Mining Enforcement and Safety Administration and the National Institute for Occupational Safety and Health. Wear goggles, safety glasses or face shield, protective clothing and rubber gloves. Wash thoroughly after handling, before eating or smoking. Remove contaminated clothing and wash before reuse."
5. Remove Instruction Number 4 under the Directions for Use. Instruction Number 4 contradicts the recommendation under the Precautionary Statements that the applicator wear a gas mask during application of test material.

REVIEW:

- (1) Acute Dermal Toxicity Study: Research and Consulting Company AG; RCC Project No. 050747; Data Accession No. 264385; October 7, 1985.

PROCEDURE:

Three groups of five male and five female New Zealand White rabbits were clipped free of fur on the back. Twenty-four hours later, each animal received a single topical application

of either 50, 150, or 300 mg/kg of test material applied to a test site on the clipped area. Each test site was covered with occlusive wrap for 24 hours. After exposure, the wrap and residual material were removed. Animals were observed on the day of dosing and daily for 15 days. Animals were necropsied at study conclusion.

RESULTS:

At 50 mg/kg, no deaths occurred. At 150 mg/kg, 2/5 males and 1/5 females died. At 300 mg/kg, 5/5 males and 4/5 females died. The LD₅₀ for males was reported to be 145 (81-293) mg/kg. The LD₅₀ for females was reported to be 202 (106-406) mg/kg.

Toxic symptoms observed were sedation, dyspnea, necrosis, ataxia, salivation, restlessness/excitement, cyanosis, spasms, saltatory spasms, paddling movement, curved or ventral body position, rhinorrhea, and whitish discharge. Gross necropsy revealed mottled lungs, discolored mammary glands, pale liver, mottled liver, and marginal areas of stomach dark red.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: I - Danger.

(2) Acute Dermal Toxicity Study: Research and Consulting Company AG; RCC Project No. 042658; Data Accession No. 264384; April 19, 1985.

PROCEDURE:

Four groups of five male and five female Wistar rats were clipped free of hair on the backs. Twenty-four hours later, each group received a single dermal application of either 60, 120, 250, or 600 mg/kg of test material applied to the clipped test site and kept under occlusive wrap for 24 hours. After exposure, the wrapping and residual test material were removed. Animals were observed four times on day of dosing and daily for 15 days. Body weights were calculated prior to dosing and on days 8 and 15. Animals were necropsied at study conclusion.

RESULTS:

No deaths occurred at 60 or 120 mg/kg. At 250 mg/kg, 3/5 males and 5/5 females died. At 600 mg/kg, 5/5 males and 5/5 females died. The LD₅₀ for males was reported to be 225 (136-436) mg/kg. The LD₅₀ for females was reported to be 181 (142-276) mg/kg.

Toxic symptoms observed were dyspnea, erythema, ruffled fur, sedation, exophthalmos, ventral or curved body position, spasms, edema, and necrosis. Gross necropsy revealed brownish contents in small intestines.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: I - DANGER.

(3) Acute Inhalation Toxicity Study: Research and Consulting Company AG; RCC Project No. 042660; Data Accession No. 264386; May 28, 1985.

PROCEDURE:

Two groups of five male and five female Wistar rats were exposed for 4 hours in a nose only inhalation chamber to an analytically measured concentration of 0.0296 or 0.560 mg/L of test material. Animals were observed during exposure. Animals were weighed prior to dosing and necropsied at study conclusion.

RESULTS:

Both groups of animals died within 30 minutes of exposure to 0.0296 and 0.560 mg/L of test material. The LC₅₀ was reported to be < 0.0296 mg/L. Animals exhibited restlessness and excitement prior to death. Gross necropsy revealed dark-red to black discolored lungs and stomach, and meteorism of the intestines.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: Category I - DANGER.

(4) Acute Oral Toxicity Study: Research and Consulting Company AG; RCC Project No. 042647; Data Accession No. 264390; April 19, 1985.

PROCEDURE:

Four groups of five male and five female Wistar rats each received a single oral dose by gavage of either 25, 60, 100, or 300 mg/kg of test material. Animals were weighed prior to dosing and on days 8 and 15. Animals were observed four times on the day of dosing and daily thereafter for 15 days. Animals were necropsied at study conclusion.

RESULTS:

No deaths occurred at 25 mg/kg. At 60 mg/kg, 4/5 females died. At 100 mg/kg, 5/5 males and 4/5 females died. At 300 mg/kg, 5/5 males and 5/5 females died. The LD₅₀ for males was

reported to be 82 (43-155) mg/kg. The LD₅₀ for females was reported to be 55 (12-99) mg/kg. Toxic symptoms observed were sedation, dyspnea, spasms, crying, curved or ventral body position, saltatory spasms, ruffled fur, exophthalmos, and latero-abdominal position. Gross necropsy revealed reddened intestines, and mottled lungs.

STUDY CLASSIFICATION: Core Guideline Data.

TOXICITY CATEGORY: II - WARNING.

- (5) Primary Eye Irritation Study: Research and Consulting Company AG; RCC Project No. 042682; Data Accession No. 264387; April 1, 1985.

PROCEDURE:

Three New Zealand White rabbits each received 0.1 ml of test material in the left eye. The right eye served as a control. Eye irritation was scored at 1, 24, 48, and 72 hours.

RESULTS:

At 1 through 72 hours, all animals exhibited corneal opacity, severe erythema and edema of conjunctivae, severe discharge, iris not visible in 2/3 animals and partly visible in 1/3 animals, and eyelid half closed in 2/3 animals. Corrosion of the cornea and conjunctivae was observed at 1-72 hours. Primary irritation score 10.8 out of possible maximum score of 13.

STUDY CLASSIFICATION:

Core Minimum Data - See comments under Recommendation.

TOXICITY CATEGORY: I - DANGER.

- (6) Primary Skin Irritation Study: Research and Consulting Company AG; RCC Project No. 042671; Data Accession No. 264388; April 1, 1985.

PROCEDURE:

Three New Zealand White rabbits were clipped free of fur on the back. Twenty-four hours later, each animal received 0.5 ml of test material applied to the clipped test site and covered with occlusive wrap for 24 hours of exposure. The wraps were removed and skin irritation scored approximately 1 hour after treatment.

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RESULTS:

All animals died within 1 hour of treatment. Toxic symptoms observed were sedation, crying, spasms, dyspnea, and curved body position. One hour after treatment, animals exhibited severe erythema at marginal areas, slight edema and greenish discoloration of test site.

STUDY CLASSIFICATION:

Core Minimum Data - See comments under Recommendation.

TOXICITY CATEGORY: I - DANGER.

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Directions for use.

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Large structural timbers have so many different end uses that the groundline area of 40" circumference standing poles is taken as a guide and example for application of this product.

For interior decay, bore a pattern of holes about 2 1/2 times the radius of the wood in length at about 45° angle downward. The first hole should be at the groundline and succeeding holes about 6"-12" higher and 90° rotated from the next lower hole.

1. Always open tin and tubes in the open area.
2. Have both the open device and glass tube with active ingredients within arm's reach.
3. For safety reasons keep an appropriate gas mask at hand.
4. Open tin carefully, place opening device on top of the tube. By pressing it the seal is broken.
5. Insert tube into pre-drilled hole in the pole, setting the open side of the tube downwards. Plug hole with a tight fitting treated wooden dowel, using the precautions of wearing safety goggles and gloves to prevent exposure to the product.
6. Repeat application procedure for each hole.

STORAGE AND DISPOSAL

STORAGE:

- Store only in closed original container to prevent leakage.
- Store only in cool, well-ventilated, locked areas, away from food and feedstuff, out of reach of children and irresponsible persons.
- Avoid exposure to heat and/or direct sunlight.
- Do not drop container onto or slide across sharp objects.

CONTAINER DISPOSAL:

- Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other approved state and local procedure.
- Do not reuse container for any purpose.

PESTICIDE DISPOSAL:

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or dilute is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision, and only for those uses covered by the Certified Applicator's certification.

D e s u s a

M E T H Y L I S O T H I O C Y A N A T E

CAS NO.: 556-61-6

FUNGICIDE - INSECTICIDE

for wood

Active Ingredients:

Methylisothiocyanate 97% S.W.
 Inert Ingredients 3% S.W.
 100%

KEEP OUT OF REACH OF CHILDREN

DANGER
FLAMMABLE

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Administer activated charcoal stirred into water. Always call a physician. Never give anything by mouth to an unconscious person.
IF INHALED: Remove victim to fresh air. Apply respiration if indicated. Call a physician immediately.
IF ON SKIN: Remove contaminated clothing and wash affected area with soap and water.
IF IN EYES: Flush eyes with plenty of water. Call a physician immediately.
 SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

EPA Reg. No.

EPA Est. No.

Degussa Corporation
Chemical Division
Teterboro, N. J.

Net contents: . . . 270 ml (0.595 lbs., 9 tubes)

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER: Highly toxic if swallowed. Causes eye, skin and mucous membrane irritation.

Do not breathe vapor. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling and before eating or smoking.

Applicators must wear gloves impervious to the wood treatment formulations (e.g. polyvinyl acetate (PVA), polyvinyl chloride (PVC), or neoprene) in all situations where dermal contact is expected (e.g. during the actual application process).

Applicators must wear long sleeved shirts, long pants, and an impermeable apron during the application and mixing processes and all situations where dermal contact is expected.

Work clothing must be changed when it shows signs of contamination. Launder work clothing separately from other household laundry. Dispose of worn-out work clothing and workshoes or boots in any general landfill, in the trash, or in any other manner approved for pesticide disposal.

Applicators must not eat, drink, or use tobacco products during those parts of the application process that may expose them to the wood treatment formulation.

Wash thoroughly after skin contact, and before eating, drinking, use of tobacco products, or using restrooms.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and wildlife. Do not apply directly to water. Do not apply where runoff is likely to occur. Do not contaminate water by cleaning of equipment or disposal of wastes.

PHYSICAL OR CHEMICAL HAZARDS

Do not use, pour, spill, or store near an open flame.

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