MEMORANDUM

Date: August 24, 1983

Subject: EPA File Symbol: 476-EEEG
Ordram A 6-E

From: Deloris F. Graham
FHB/TSS

To: Richard Mountfort
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (TS-767)

Applicant: Stauffer Chemical Company
1200 South 47th Street
Richmond, California 94804

Active Ingredient:
S-ethyl hexahydro-1H-azepine-1
-carbothioate...........................................69.3%
Inert Ingredients........................................30.7%

Background: Submitted Acute Oral, Acute Dermal, Eye Irritation and
Primary Dermal Irritation Studies. Studies conducted by Stauffer Chemical
Company. Data under Accession Number 250520. Method of support not indicated.

Recommendation:

(1) FHB/TSS finds these data acceptable to support conditional
registration of this product.

(2) An Acute Inhalation Study was not submitted and one must be submitted
and/or cited.

(3) The appropriate signal word is II-WARNING

Label:

(1) Labeling adequate as submitted by applicant.

Review:

(1) Acute Oral Toxicity Study: Stauffer Chemical Company; Lab Report
#T-10998; March 23, 1983.
Procedure: Six groups, 5 groups consisting of 10 M rats each and one group consisting of 20 M rats, received one of the following doses: 000, 900, 950, 1000, 1259 and 1585 mg/kg. Observations made daily for 14 days after treatment. Necropsy performed on all animals. A total of 60 male rats were treated with water and served as a vehicle control.

Results: At 800 mg/kg, 2/10 M died; at 900 mg/kg, 2/10 M died; at 950 mg/kg, 4/10 M died; at 1000 mg/kg, 19/20 died; at 1259 mg/kg, 9/10 M died; at 1585 mg/kg, 10/10 M died. Toxic signs included severe depression, ptosis, ataxia, piloerction, a hunched posture, slow and shallow respiration, stained rough coats, mild diarrhea, black ano-genital stains, chromodactyrosis, hyperepsitivity to touch and sound, red stained body fur, hindleg weakness, tremors, prostration, diuresis, tail chewing, dyspnea, salivation, inactivity, head tilt, pale eyes and ears, red stains at the muzzle and cannibalistic behavior. Necropsy revealed dark-edged livers and spleens; blackened kidneys, black gelatinous-material in the GI tract; dark greenish-brown areas on the testes; pale areas on liver; enlarged spleens, small purple testes; dark-edged kidneys; GI tracts filled with a dark green or yellow fluid; GI tract filled with gas; reddened lungs; intestines bloated with gas; dark red GI mucosa; darkened spleens; pale, mottled livers; red or black fluid in the bladder; yellow peritonium, epididymides and testes; foamy red fluid in the trachea; a dark reddish-black fluid in the urinary bladder; 18/70 rats found in rigors. LD50 was 940 mg/kg, with confidence limits between 872 and 1014 mg/kg. All rats appeared throughout the test period in control group. No abnormalities at necropsy in control group.

Study Classification: Core Guideline Data. When used in conjunction with study number 2.

Toxicity Category: III-CAUTION

(2) Acute Oral Toxicity Study: Stauffer Chemical Company; Lab Report #T-10988; March 23, 1983.

Procedure: 5 groups consisting of 10 F rats each received one of the following doses: 600, 794, 900, 1000 or 1259 mg/kg. Observations made daily for 14 days after treatment. Necropsy performed on all animals. A total of 40 F rats were treated with water and served as a vehicle control.

Results: At 600 mg/kg, 1/10 F died; at 794 mg/kg, 1/10 F died; at 900 mg/kg, 8/10 died; at 1000 mg/kg, 1/10 F died; at 1259 mg/kg, 10/10 F died. Toxic signs included moderate to severe depression, piloerction, red facial stains, ataxia, chromodactyrosis, prostration, diuresis, slow and shallow respiration, ptosis, vocalization upon touch, lacrimation, diarrhea, red stains at the
muzzle; brown ano-genital stains, cannibalistic behavior and
inactivity. Necropsy revealed reddish-black fluid in the GI tract,
darkened lungs; dark-edged liver; dark-edged spleen; reddened lungs;
reddened GI mucosa; black solid material in the intestine; black
spleen and kidneys; dark red and green fluid in the bladder; pale
mottled livers with dark edges; reddish-yellow or greenish-yellow
fluid in the GI tract; distended stomach and bladder; intestines
filled with gas; yellow stained peritoneum; 29/50 rats were found in
rigor. LD$_{50}$ was 852 mg/kg, with confidence limits between 765 and
949 mg/kg. No toxic signs or abnormalities noted at necropsy of
control of animals.

Study Classification: Core Guideline Data. When used in conjunction
with study number 1.

Toxicity Category: III-CAUTION

(3) Acute Dermal Toxicity Study: Stauffer Chemical Company; Lab
Report #T-10998; March 23, 1983.

Procedure: Five male and five female rabbits received 2000 mg/kg of
the test material under occlusive wrap for 24-hour exposure. The
skin was abraded on one-half the animals and intact on the other half
of the animals. Observations made daily for 14 days after
treatment. Necropsy performed on all animals. Two male and 2
female rabbits were sham-treated and served as controls.

Results: No mortalities. Moderate erythema and edema noted. No
other toxic signs noted. No abnormalities at necropsy. LD$_{50}$
greater than 2000 mg/kg.

Study Classification: Core Guideline Data.

Toxicity Category: III-CAUTION

(4) Primary Dermal Irritation Study: Stauffer Chemical Company; Lab
Report #T-10998; March 23, 1983.

Procedure: Six rabbits received 0.5 ml of the test material at
intact and abraded skin sites per animal under occlusive wrap for 4
hours exposure. Observations were made at 4, 24 and 72 hours after
treatment.

Results: At 24 hours, 6/6 had erythema (6/6 = 1) and no edema. At
72 hours, 5/6 had slight erythema (5/6 = 1) and 1/6 severe erythema
(1/6 = 4): Primary Irritation Score was 1.17.

Study Classification: Core Guideline Data.

Toxicity Category: IV-CAUTION
(5) Eye Irritation Study: Stauffer Chemical Company; Lab Report 
#T-10998; March 23, 1983.

Procedure: Nine rabbits received 0.1 ml of the test material in one 
eye each. The treated eyes of three of the rabbits were washed with 
water 20-30 seconds after treatment. Observations made at 1, 24, 48 
and 72 hours, and at 4 and 7 days after treatment.

Results: At 24 hours, 6/6 animals of the unwashed group and 1/3 of 
the washed group had corneal opacity (6/6 = 20)(1/3 = 20); 4/6 + 1/3 
iris irritation (4/6 = 5!(1/3 = 5)); 6/6 & 3/3 conjunctive redness 
(5/6 = 2, 1/6 = 3)(3/3 = 2), chemosis (6/6 = 1)(3/3 = 1) and 
discharge (2/6 = 1, 3/6 = 2, 1/6 = 3)(2/3 = 1), 1/3 = 2).

At 7 days, 1/6 had corneal opacity (1/6 = 20), redness (1/6 = 2), 
chemosis (1/6 = 1) and discharge (1/6 = 3). At day 14, all 
irritation had subsided. Neovascularization also noted.

Study Classification: Core Guideline Data

Toxicity Category: II-WARNING
Molinate toxicology review

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