12-7-78

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: December 7, 1978

SUBJECT: Pesticide Petition 8F2117, EPA Reg. No: 352-372 & 352-371 to establish a tolerance for residues of oxamyl in/on corn grain, fodder and forage of 0.1 p.p.m.

FROM: John E. Preston, Ph.D.
Toxicology Branch

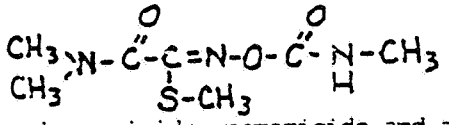
TO: Richard Green
Product Specialist (#12)

U01719

Petitioner: E.I. DuPont de Nemours & Company
Wilmington, DE.

Background data

Chemically, Oxamyl is Methyl N', N'- dimethyl-N-[(methyl carbamoyl) oxy]-1-thiooxamimidate with the structure:



Caswell No. 625A

It is an insecticide, nematicide and acethylcholinesterase inhibitor. Two formulations of oxamyl are available: Vydate G, a granular product with 10% active ingredient (a.i.) and Vydate L, a water soluble liquid containing 24% of the active ingredient, Oxamyl.

Related Petitioner: 6F1696, 6F1695, 3G1349, 3G1316, 7F1907, 7F1909. 7F1937 & 6F1811.

Recommendation

No toxicological data were submitted with this petition. However, data previously submitted in support of petitions #3G1316 & 3G1349 were incorporated by reference.

These data were reviewed and the acceptable daily intake (ADI) and theoretical maximal residue contribution (TMRC) of residues of Oxamyl on corn grainwere calculated (attached).

The petition to establish a tolerance for residues of Oxamyl in/on corn grain, fodder & forage of 0.1 p.p.m. is toxicologically supported.

Summary of Toxicity Data

I Acute Studies

	Results
Acute Oral LD 50 in rats, CR-CD, male. 5 rats/dose level, 3 dose levels: 50, 30 & 15 mg/kg. Vydate L formulation with 26% a.i. (oxamyl)	LD 50 = 37 (27-51) mg/kg of a.i.

Core Minimum Data
Source: 352-GTR (371/372)
A #'s 8910, 03100

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I Acute Studies (cont.)

Acute Dermal LD 50 in rabbit. 6 male rabbits/dose level. 4 dose levels: 1000, 750. 500 & 250 mg/kg. Vydate L formulation with 26% a.i.

Results
LD 50 = 740 ± 150 mg/kg of a.i.

Core Minimum Data
Source: 352-371/372
A # 08910, 03100

Primary Skin Irritation, in guinea pigs, albino. 10 males/dose level. 2 dose levels: 0.05 ml of a 50% and a 100% solution of test solution, namely Vydate L with 26% of a.i. (Oxamyl)

Not a skin irritant.

Supplementary- dose was too low.

Source: 352-371/2
A #08910, 03100

Primary Skin, Sensitization in guinea pigs. Dose was: 0.1 ml of 1% solution of a.i. per sacral intradermal injection, giving 4 inj. over a 3 wk. period. After 2 week rest, challenge doses of 0.05 ml of 50% and 100% Vydate L were given topically. (26% oxamyl)

Results
Not a skin sensitizer

Classification:
Supplementary, dose too low, dose administered weekly rather than tri-weekly intervals.
Source: 352-371/2
A # 08910, 03100

Primary Eye Irritation in rabbit, albino. 6 rabbits/dose using 0.1 ml of Vydate L formulation to right eye. (Vydate L with 26% Oxamyl)

Negative as eye irritant.

Classification: Core Minimum Data
Source: 352-371/2
A #08910,

Acute Aerosol Inhalation Study in rats, Sprague Dawley albino. 5 M & 5 F per dose level. 4 dose levels 13.7, 9, 5.5 & 2.1 g/l. Test material identified only as H7648-03 or MR-1617 (probable Vydate L formulation) One hour exposure at each dose level.

LD 50 = 4.5 mg/l

Signs/symptoms: excitation, lacrimation, rhinitis, tremors, prostration.
Classification: Invalid test material not identified, study by I.B.T. Labs.

Source: 352-371/2
A #'s 08910, 03100

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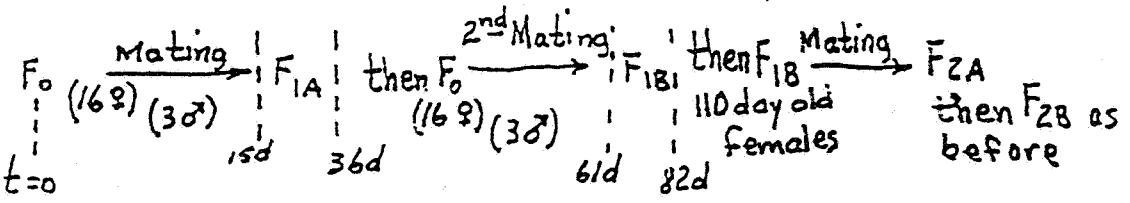
II Subchronic

	Results
Subchronic Feeding study in dogs, 13 weeks. Beagle dogs. No data on no. dogs/dose level. Three dose levels: 150, 100 & 50 p.p.m. Oxamyl, IND 1410.	No significant differences, test vs control dogs. A summary report Classification: Invalid, inadequate data to classify study. Source: PP #3G1316 A #092248 Introduction (p.1).
Subchronic Feeding study in Rats- 90-day. No data on species, or no. of rats/dose level. 3 dose levels: 500, 100 & 50 p.p.m. (note 500 was reduced to 150 p.p.m. after 4 days.) Oxamyl, IND 1410.	NOEL = 50 p.p.m. At or above 100 p.p.m. there was dec. wgt. gain but no other clinical, gross or histopath. changes. Classification: Invalid- a summary study with insufficient data for evaluation. Source: PP #3G1316 A #092248 (Introduction, P.1)

III Chronic Studies

Chronic Feeding in Rats- 24 months. CHR-CD albino rats, 36 M & 36 F/dose level. 3 dose levels: 150, 100 & 50 p.p.m. (Administered in corn oil mixed with feed) Test material, a wettable powder with 95% technical Oxamyl, IND-1410.	NOEL = 50 p.p.m. based on wgt. gain, food intake, hematol., urinalysis, ChE activity, gross & histopathology. Classification: Core Minimum Data. Source: PP #3G1316, A #092248, 11/29/72
Reproduction Study in Rats- 1 Generation. CHR-CD albino rats. 16 F (& 3 M) per dose level. 3 dose levels: 150, 100 & 50 p.p.m. Males & Females were taken from same dose group in main (24 month) feeding study after 12 weeks.	NOEL = 50 p.p.m. based on all parameters studied, weight gain to fertility index. Classification: Core Minimum Data Source: PP #3G1316 A #092248, 11/29/72.



Oxamyl technical as wet. pc.

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Chronic Feeding Study dogs- 2 years. Beagle, male and female, 1-2 years of age. 4 M & 4 F/dose level. 3 dose levels: 150, 100 & 50 p.p.m. Oxamyl, technical-as a 95% oxamyl wettable powder.

NOEL = 100 p.p.m. based on B.wgt. food intake, hematology, urinalysis, biochem., mortality or pathology except some evidence of liver effect at 150 p.p.m.
Classification: Core Minimum
Source: PP #3G1316
A #092248, 11/29/72.

Teratogenicity Study in Rats. (IL 5-71)

R. Schmidt, D.V.M. in his memo of 11/6/72 to Drew M. Baker, Chief Petitions Control Branch, Pesticides Tolerances Division, reviewed a Teratogenic study in rats (5-71) in which he concluded that there was no effect on embryonal development at the 4 dose levels used: 300, 150, 100 & 50 p.p.m.

Note: All the above studies were carried out by the Haskell Laboratory for Toxicology and Industrial Medicine (HL) at the E.I. DuPont DeNemours & Company Newark, Deleware except the Acute Inhalation Toxicity Study which was done by Industrial Bio Test Laboratories (IBT) and should therefore be validated.

RD inital R. Gessert
TOX/HED: 11/28/78:lf

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