4-25-85

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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Reg. No.: 279-2862; Carbofuran; miscellaneous data; five acute studies
Caswell #: 160A
Accession #: 256481

TO: Jay Ellenberger
Product Manager (12)
Registration Division (TS-767)

THRU: Robert P. Zendzian Ph.D. 4/18/85
Acting Head, Review Section IV
Toxicology Branch
Hazard Evaluaition Division (TS-769)

FROM: William Dykstra, Ph.D. William Dykstra 4/04/85
Toxicology Branch
Hazard Evaluation Division (TS-769) 4/18/85

Requested Action:

Review acute oral LD_{50} studies on carbamate and phenolic metabolites of carbofuran to determine relative toxicity.

Conclusions:

1. The acute oral LD_{50} studies are acceptable and support the registration of carbofuran.

Background:

The registrant, FMC, submitted these additional studies to Agriculture Canada in order that a determination of the toxicological significance of carbamate and phenolic metabolites could be made.

Review:

1. Acute oral LD_{50} of FMC 18209 (3-hydroxy carbofuran) technical in rats (FMC # A83-1136; 4/12/84).

Groups of 10 male and 10 female Sprague-Dawley rats were orally gavaged with graded doses of test material in corn oil.

Observation was 14 days.

Results:

Mortality data are shown below:

Male		Female	
Dosage mg/kg	% mortality	Dosage mg/kg	% mortality
25	80	18	100
20	30	15	70
18	10	10	60
		8	40
		7.5	55
		7.0	45
		5.0	0

Male LD_{50} = 21.9 mg/kg (19.9 - 23.8)

Female LD_{50} = 8.3 mg/kg (6.8 - 9.9)

Toxic Signs: Tremors, oral discharge, stained fur.

Body Weight: All but two surviving animals gained weight.

Necropsy: No gross lesions except for blood in intestine of one rat.

Toxicity Category I: Danger.

Classification: Core minimum data. 4

2. Acute oral LD_{50} study with FMC 1781 Technical (3-Keto carbofuran) in rats (FMC study #: A83-1137; 4/12/84).

Groups of 10 male and female Sprague-Dawley rats were orally gavaged with graded doses of test material in corn oil.

Observations were for 14 days.

Results: Mortality data are shown below:

Male		Female	
Dosage mg/kg	% mortality	Dosage mg/kg	% mortality
200	100	150	100
120	80	120	80
110	90	100	40
100	20	70	30
70	10		

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Male LD_{50} = 108 mg/kg (94.5-121)

Female LD_{50} = 93.1 mg/kg (76.2-110)

Combined LD_{50} = 107 mg/kg (91.1-123)

Toxic Signs: Tremors, oral discharge, stained fur and decreased locomotion.

Body Weight: Survivors gained weight.

Necropsy: No gross lesions.

Toxicity Category II: Warning.

Classification: Core minimum data.

3. Acute oral LD_{50} study with FMC 16498 technical (3-hydroxy-7-phenol) in rats (FMC A83-1134; 3/29/84).

Groups of 10 males and 10 females Sprague Dawley rats received oral gavage graded doses of test material in corn oil.

Observation was for 14 days.

Results:

Mortality data are shown below:

Male		Female	
Dosage mg/kg	% mortality	Dosage mg/kg	% mortality
2400	80	2000	90
2000	60	1700	50
1400	10	1400	20

Male LD_{50} = 1916 mg/kg (1656-2175)

Female LD_{50} = 1654 mg/kg (1500-1807)

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Toxic signs: Prostation, decreased locomotion, nasal, ocular and oral discharge.

Body weight: Survivors gained weight.

Necropsy: Blood in intestines of decedents.

Toxicity Category III: Caution.

Classification: Core minimum data.

4. Acute oral LD_{50} study with FMC 16490 technical (3-keto-7-phenol) in rats (FMC # A83-1135; 3/28/84).

Groups of 10 males and 10 females Sprague Dawley rats were orally gavaged with graded dosages of test material in corn oil. Observations was for 14 days.

Results:

No deaths at 300 and 800 mg/kg of test material.

LD_{50} > 800 mg/kg (both sexes)

Toxic Signs: Lacrimation and decreased locomotion in the 800 mg/kg.

Body Weight: All rats gained weight.

Necropsy: No gross lesions.

Toxicity Category III: Caution.

Classification: Core minimum data.

5. Acute oral LD_{50} study with FMC 10272 technical (7-phenol) in rats (FMC # A83-1133; 3/28/84).

Groups of 10 males and 10 females Sprague-Dawley rats were orally gavaged with graded dosages of test material undiluted. Observations was for 14 days.

Results:

Mortality data are shown below:

Male		Female	
Dosage mg/kg	% mortality	Dosage mg/kg	% mortality
3000	80	2300	70
2300	40	1800	50
1800	10	1400	40
		1000	10

Male LD_{50} = 2450 mg/kg (2137-2764)

Female LD_{50} = 1743 mg/kg (1362-2124)

Toxic Signs: Prostation, tremors, discharge, decreased locomotion.

Body Weight: Survivors gained weight.

Necropsy: Blood in intestine of decedents.

Toxicity Category III: Caution.

Classification: Core minimum data.

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