

US EPA ARCHIVE DOCUMENT

ENVIRONMENTAL SAFETY
REVIEW SUMMARY

106401

1-21-74

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1. U.S. Department of Agriculture
Environmental Effects Branch
Washington, D.C. 20250

Chemical trade Avenge 2A-5
 Control AC 84,777
 chemical 1,2-dimethyl-3,5-diphenylpyrazolium methyl sulfate ~~31025~~
 Company CYANAMID
 Submission TEMP PERMIT 241-EXP-X PETITION 4G 1453 REGISTRATION
 Date submitted 1/15/74 Date received 1/21/74

Type of chemical Herbicide

Use Postemergence control of wild oats in spring planted barley. 502 gallons to treat \approx 800 A of barley in Ca., Col., Idaho, Minn., Mont., N.D., Ore., S.D., Wash., Wyo. Proposed tolerance 0.5 ppm Avenge in barley straw and 0.25 ppm in barley grain

Data submitted for review

Environmental safety:

Mammal LD₅₀ ✓
 Mammal chronic ✓
 Fish ✓
 Bird ✓
 Shrimp, crab, oyster _____
 Other _____

Environmental chemistry (70-15)

Fish residue ✓
 Other IN PROGRESS

chemical Avenge
 Pesticide Cyanamid

Reg no. _____
 Exp permit no. 241-EKP-X
 Pesticide no. 4G1453
 Submission date 1/15/74

Accession NO _____

ORGANISM	TEST	LD ₅₀	LC ₅₀			TEST MATERIAL
			Dietary	LC ₅₀ Aquatic		
			24 hr	48 hr	96 hr	
Rat, ♂	acute oral	270 mg/kg				TECHNICAL
Mouse, ♂	acute oral	31 mg/kg				"
Mouse, ♀	acute oral	44 mg/kg				"
Rabbit, ♂	acute oral	470 mg/kg				"
Rabbit, ♂	acute dermal	> 3540 mg/kg				"
Bluegill	acute	—	1000 ppm	696 ppm		TECHNICAL NO effect = 28
Rainbow trout	acute	—	1000 ppm	694 ppm		TECHNICAL NO effect = 49
Mallard duck	Dietary	—	10,388 ppm			TECHNICAL
Coburnite guail	Dietary	—	4,640 ppm			TECHNICAL
Bluegill	Acute	NE = 56.0 ppm	111.0		90.7	Average 2A-S
Rainbow trout	Acute	NE = 75.0 ppm	>140.0 2210.0		>75.0 <100.0	Average 2A-S

Submitted
 10/24/74 w/ SF 15376
 from 3545

Chemical AvengeConclusions

1. We have sufficient data to support permit.
2. This product is not toxic to fish, mammals, or birds.
3. Residue levels in fish cause no concern (\approx 5-10%).
4. Chronic effects, based on work completed to date, cause NO environmental concern (rat, dog, rat 3 generation).
5. Chemical appears to be persistent in soil from preliminary reports. Need 70-15 data before environmental significance can be ascertained.
6. Use on barley, one application per season. Applied at at 3-5 leaf stage of the wild oat (pest to be controlled)
7. Both ground and aerial applications.
8. Additional environmental safety may be required unless ones are expanded and/or ^{when} 70-15 and other studies recently in progress are completed. i.e. bird reproductive study.

Recommendations

1. NAC permit.

2.

(New chemical)

Chemical Avenge

Petition Cyanamid

Req. No. _____

Exp permit No. 241-EXP-X

Petition no. 4G1453

Accession NO _____

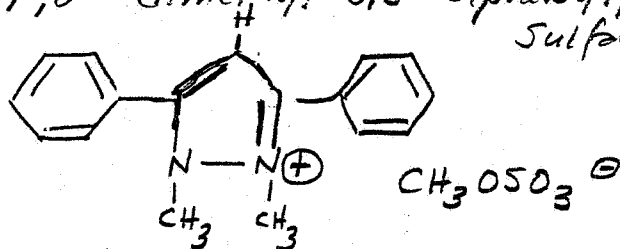
Submission date _____

Chemistry

AC 84,777; CL 84,777

Structure

1,2-dimethyl-3,5-diphenylpyrazolium methyl sulfate



Chemical characteristics

1. Molecular wt 360.4
2. Empirical formula $C_{18}H_{20}N_2SO_4$
3. Vapor pressure: NONE
4. Solubility: 76.2% in water @ 23°C

Formulation (s)

Avenge 2A-5 31.8% active

Use

Experimental use on barley.

Chemical Avenue 2A-5

Citation Cyanamid

Reg. no. _____

Exp permit 241-EXP-X

Ref. no. 4G1453

Submission 1/15/74
DATE

Accession no.

ORGANISM	DOSE	SYMPTOM / EFFECT	TEST MATERIAL
Rat 3 month (interim report)	100, 500, 2500 ppm	General appearance and behavior, appetite, and elimination pattern Body weight gains and food consumption were within normal limits. No significant differences in gross necropsy or microscopic examinations.	AC 84,777 (TECHNICAL)
Dog 3 months	100, 500, 2500 ppm	Appearance, behavior, body weight, hematological, biochemical, pathological and urinary findings were normal.	AC 84,777 (TECHNICAL)
Rat (3-generation reproduction)	0 500 2500 ppm	no signs of systemic toxicity observed; body wts of high dose rats somewhat lower than controls; no reproductive impairment noted; statistically signif. difference (decrease) in wt of weanling ♂ + ♀ rats in the 2500 ppm group was the only consistent; probably compound-related effect.	AC 84,777
Bluegill (Residue)	.01 ppm and 1.0 ppm radiolabelled	28 day exposure and 28 day withdrawal. No significant accumulation of CL84,777 in the edible part ^{portion} maximum accumulation of 5.5 ppm in viscera (1.0 ppm exposure) and 0.21 ppm in viscera (.01 ppm exposure). 50% residue dissipation in 7 days in clean water.	CL84,777