108501
SHAUGHNESSEY NUMBER

Completed: 1-31-84 LWT
Revised: _____ _____
_____ _____

EEB Chemial Profile

Pesticide Name: Pendimethalin

100 Fish and Wildlife Toxicology

100.1 Minimum Requirements

100.1.1 Avian Acute Oral LD50

Species	Test Material	Result	Category	Ref.
Mallard Duck	Tech.	1421 mg/kg (938-2152 mg/kg	Core	

100.1.2 Avian Dietary LC50

Species	Test Material	Result	Category	Ref.
Mallard Duck	Tech.	~~10,388 ppm~~ (~~1177-91,712~~ ppm)	Core	
Bobwhite Quail	Tech.	4,187 ppm 3149-5567 ppm)	Core	

100.1.3 Fish Acute LC50

Species	Test Material	Result	Category	Ref.
Rainbow trout	93.2%	0.14 ppm (0.11-0.17 ppm)	Supplemental	
Bluegill Sunfish	93.2%	0.20 ppm (0.16-0.24 ppm)	Supplemental	
Channel catfish	93.2%	0.42 ppm (0.31-0.56 ppm)	Supplemental	

100.1.4 Aquatic Invertebrate LC50

Species	Test Material	Result	Category	Ref.
Daphnia magna	Tech.	0.28 (ppm) (0.23-0.33 ppm)	Core	

100.2 Additional Terrestrial Laboratory Tests

Laboratory tests at the University of California, Riverside Indicate hat Prowl is non-toxic to honey bees at 49.75 mg/bee, which is equivalent to about 50 lbs. a.i./acre. (Dr. E.L. Atkins, personal communication 10/15/79).

100.3 Additional Aquatic Laboratory Tests

Fathead Minnow Chronic (2 generations), Tech., 6-13-78. Reduction in egg production at 9.8 ppb, as well as, reduced hatchability of eggs at 22 and 43 ppb.
Core. Acc. No. 96342

Daphnia magna (chronic reproduction), Tech., 6-7-82.
21-day study indicated that the NOEC was 14 ppb.
Reproductive impairment was found after 15 days at 22.1 ppb and at 17.2 ppb after 21 days.
Core. Acc. No. (Gramey, 1981)

101 General Toxicology

101.1 Acute Toxicity

	97.7% Tech.	93% Tech.	Prowl 10G	Prowl 4E
Oral LD_{50}				
mice - male	1620 mg/kg	-	-	-
Female	1340 mg/kg	-	-	-
Rats - male	1250 mg/kg	2140 mg/kg	>5000 mg/kg	3380 mg/kg
Female	1050 mg/kg	-	>5000 mg/kg	-
Rabbits - male	-	>5000 mg/kg	-	-
Dogs	>5000 mg/kg			
Dermal LD_{50}				
Rabbits	>5000 mg/kg	>5000 mg/kg	>5000 mg/kg	>2ml/kg
Inhalation LC_{50}				
Rats -15% aqueous	solution fog	-	>320 mg/l	

	93% Tech.	Prowl 10G	Prowl 4E
Dermal Irritation			
Rabbits	No irritation	Slight erythema	Moderate to severe irritant (5.0)
Eye Irritation			
Rabbits	Slight conjunctival Irritation	Conjunctival irritation (no corneal involvement)	Severe irritant (1/6 showed Corneal opacity)

101.2 Subacute Toxicity

Feeding studies:

90 days	rats	NEL	500 ppm
90 days	dogs	NEL	62.5 mg/kg (2500 ppm)
18 months	mice	NEL	500 ppm

Dermal Studies:

21 days	Rabits	NEL	1 g/kg/day (tech)
			2 ml/kg/day (Prowl 4E) Slight to moderate erythema and edema

101.3 Chronic Toxicity

Feeding Studies:

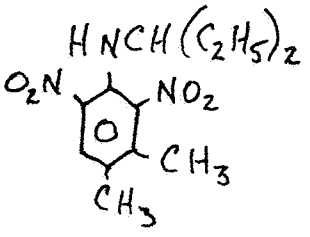
2 years	Rat	NEL	500 ppm
3 generation	Rat	NEL	500 ppm

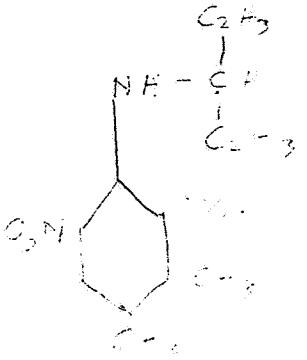
102 Physical Chemical Properties

102.1 Chemical Name

N-(lethyl propyl)-3,4-dimethyl-2,6-dinitro benzenamine

102.2 Structural Formula





102.3 Common Name

Pendimethalin, Penoxyn, Penoxalin, AC 92,553

102.4 Trade Name

Prowl

102.5 Molecular Weight

$C_{13}H_{19}N_3O_4$ - 281.3

102.6 Physical State

Orange-yellow crystals, faint nutty odor.
MP = 56-57°C
Specific Gravity = 1.19 at 25°C

102.7 Properties

102.7.1 Solubility

Solvent	Temp(°C)	Solubility (mg/l)
Water	23	0.5
Acetone	26	699.0
Xylene	26	628.0
Isopropanol	26	77.0
Corn oil	26	148.0

102.7.2 Octanol/Water Partition Coefficient

102.7.3 Soil Adsorption Coefficient Kd

102.7.4 Vapor Pressure

3.0×10^{-5} mm Hg at 25°C

103 Behavior in the Environment

103.1 Soil

1/2T is 12-16 months

103.2 Water

Prowl is stable at pH 5,7 and 9 at 25°C in the dard. Prowl may be quite persistent in an aquatic ecosystem. Prowl volatizes under photolysis.

103.3 Plant

1/2 of approx. 4 days.

103.4 Animal

BCF = 2200 x in fathead minnow