

US EPA ARCHIVE DOCUMENT

125601  
SHAUGHNESSEY NO.

Completed 1-17-84 *DM* \*  
Revised: 10-23-84 *DM*  
\*Reviewer's initial

EEB. CHEMICAL PROFILE

Pesticide Name: Paclobutrazol (PP 333 or Bonzi)

100 Fish and Wildlife Toxicology

100.1 Minimum Requirements

100.1.1 Avian Acute Oral LD50

Species	Test Material	Results	Category	Reference (Acc. No.)
Mallard Duck	Technical	>7,913 mg/kg	Core	248689 and review 4

100.1.2 Avian Dietary LC50

Species	Test Material	Results	Category	Reference (Acc. No)
Bobwhite Quail	Technical	>5,000 ppm	Core	248689
Mallard Duck	Technical	>20,000 ppm	Core	248689

100.1.3 Fish Acute LC50

Species	Test Material	Results	Category	Reference (Acc. No)
Bluegill Sunfish	Technical: 92.4%	23.6 mg/l (20.4-26.0)	Core	248689
Rainbow Trout	Technical: 97%	27.8 mg/l (26.1-30.0)	Core	248689

100.1.4 Aquatic Invertebrates LC50

Species	Test Material	Results	Category	Reference (Acc.No)
Daphnia magna	Technical: 92.4%	33.2 mg/l (25.8-53.0)	Core	248689

100.2 Additional Terrestrial Laboratory Tests None Submitted

-None Submitted-

100.3 Additional Aquatic Laboratory Tests

Species	Test Material	Result	Category	Reference (Acc. No.)
<u>Daphnia magna</u>	50% formulation	EC <sub>50</sub> = 94 mg/l (65-135)	Core for formulation testing	248689

100.4 Field Tests

N/A

101 General Toxicology

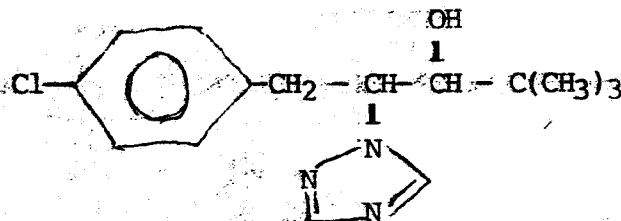
Species	Test Material	Result	Category	Reference (Acc. No.)
Rat (male)	Technical	1,954 g/kg (oral)	-	248688
(female)	"	1,336 g/kg (oral)	-	"
Mouse (male)	"	490 mg/kg (oral)	-	"
(female)	"	1,219 mg/kg (oral)	-	"
Guinea (male)	"	542 mg/kg (oral)	-	"
pig (female)	"	400 - 641 mg/kg (oral)	-	"
Rabbits (male)	"	835 mg/kg (oral)	-	"
(female)	"	937 mg/kg (oral)	-	"
Rat (Both sexes)	"	>1,000 mg/kg (dermal)	-	"
"	"	>1,000 mg/kg (dermal)	-	"

102 Physical and Chemical Properties

102.1 Chemical Name

(2 RS, 3 RS)-1-(4-chlorophenyl)-4,4-dimethyl-2-(1H-1,2,4-triazol-1-yl)pentan-3-ol

102.2 Structural Formula



102.3 Common Name

Placobutrazol

102.4 Trade Name

PP.333  
Bonzi

102.5 Molecular Weight

Not available

102.6 Physical State

off-white solid

102.7 Properties

-- None --

102.7.1 Solubility

Water = 35 mg/l (Temp. unknown)  
Acetone > used as solvents in aquatic DM<sub>60</sub> 5 tests - solubility unknown

102.7.2 Octanol/Water Partition Coefficient

Not available

102.7.3 Soil Adsorption Coefficient Kd

Not available

102.7.4 Vapor Pressure

Not available

103 Behavior in the Environment

(Excerpted from EAB reviews by Moraski, dated March 15, 1984)

103.1 Soil

1. Aerobic Soil Degradation. Report No. RJ0256B, B.R. Harvey, M.S. Weissler, C.K.J. Zinner, and I.R. Hill, 1982.

Conclusion

PP333 appears to degrade faster in soil with high organic content (Gore, 14%) than in soil with lower organic content (18 Acres, 4%).

Residue decline curves were run by EAB and indicate + 1/2 "Gore" to be 9.1 weeks and in "18 Acres" to be 30.5 weeks. This is in reasonable agreement with + 1/2 estimates given in study.

2. Leaching. Report No. RJ0244B. I.R. Hill and S. Prashad, 1982.

Conclusion

PP333 is placed on the Helling mobility scale at 2, where 1 is immobile and 5 is very mobile. PP333 could leach in sandy soils with low organic content. No aged leaching study was reported.

103.2 Water

1. Hydrolysis. Report No. RJ0316B. T.M. Woods and J.P. Leahy, 1983.

Conclusion

PP333 does not hydrolyze at 25°C at pH 4, 7 and 9 and is expected to be stable to hydrolysis under environmental conditions.

2. Aqueous Photolysis. Report No. RJ0317B. T.M. Woods and J.P. Leahy, 1983.

Conclusion

PP333 is stable to photolysis and is not expected to photodegrade in the environment.

103.3 Plant

— None —

103.4 Animal

Flow-through Bluegill Sunfish Accumulation Study. Report No. RJ0321B. M.J. Hamer and I.R. Hill, 1983.

Conclusion

A relatively low potential exists for accumulation in fish and that which is accumulated is rapidly eliminated.

103.5 Estimated Environmental Concentrations

McLane's review of 3/15/84, No. 3 provided the following maximum concentrations expected on food items for terrestrial wildlife by use of the articles of Hoerger and Kenaga (1972) and Kenaga (1973):

Residues in Food Items

<u>Vegetation Type/ Insect/Soil Surface</u>	<u>Residue from 1.0 lbs a.i. / A</u>
Sparse foliage (short grasses)	240 ppm
Long grasses	110 ppm
Leafy situations	125 ppm
Dense foliage/ small insects	58 ppm
Pods/seeds/large insects	12 ppm
Fruits	7 ppm
<u>Soil (0.1 inch)</u>	<u>22 ppm</u>

In the same review a hand calculated EEC for 1A. drainage basin into a 1A. pond with an average depth of 6 inches would result in a concentration of 736 ppb, if applied directly. The EEC for runoff was calculated by taking 1% of the 7.36 ppb.