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121001 completed: DJM 6-23-89
Shaughnessey
Number

EEB CHEMICAL PROFILE

Pesticide Name: Sethoxydim

100 Fish and Wildlife Toxicology

100.1 Minimum Requirements

100.1.1 Avian Acute Oral LD50

Species	Test Material	Result	Category	Reference (Acc. No.)
Mallard Duck	Technical 97.3%	>2510 mg/kg	Core	099539

100.1.2 Avian Dietary LD50

Species	Test Material	Result	Category	Reference (Acc. No.)
Bobwhite Quail	Technical 97.3%	>5620 ppm	Core	099539
Mallard Duck	Technical 97.3%	>5620 ppm	Core	099539

100.1.3 Fish Acute LC50

Species	Test Material	Result	Category	Reference (Acc. No.)
Bluegill Sunfish	Technical 97.3%	265.0(220 .8-318.0) mg/l	Core	099539
Rainbow Trout	Technical 97.3%	170(142-204) mg/L	Core	099539

100.1.4 Aquatic Invertebrate LC50

Species	Test Material	Result	Category	Reference (Acc. No.)
Daphnia magna	Technical 97.3%	78.1 ppm (64.2-93.5)	Core	099539

100.2-3 Additional Laboratory Tests (Aquatic and Terrestrial)

Species	Test Material	Result	Category	Reference (Acc. No.)
N/A				

100.4 Field Tests

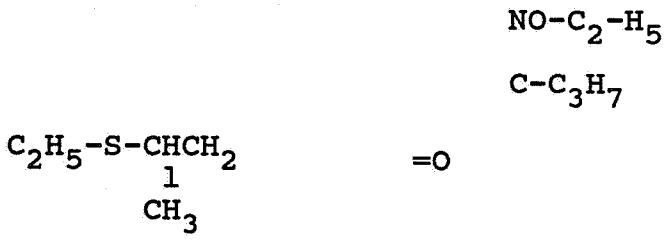
Species	Test Material	Result	Category	Reference (Acc. No.)
N/A				

101 General Toxicology (See attachment A&B)

102 Physical and Chemical Properties

102.1 Chemical Name 2-[1-(ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

102.2 Structural Formula



102.3 Common Name - Sethoxydim

102.4 Trade Name Poast
BAS 9052 H
NP 55

102.5 Molecular Weight
327.86 (Merck Index, 10th ed.)

102.6 Physical State - white solid

102.7 Properties

102.7.1 Solubility - Water = 4,700 mg/l @ pH7; 25 mg/l @ pH4
Acetone 150.7 ?
Ethanol 86.1 ?
Olive Oil 2.7 ?
Soluble in most common organic solvents (e.g. actone, benzene, ethylacetate,n-hexane, methanol all> 1 kg/kg at 25 deg. C

102.7.2 Octanol/Water Partition Coefficient - unknown

102.7.3 Soil Absorption Coefficient Kf (K values = 0.3 - 0.7)

102.7.4 Vapor Pressure - <0.1 mPa at 20 deg. C)

103 Behavior in the Environment

103.1 (excerpted from Bascietto's review of 10-18-83, #10)

Poast will photodegrade on oil surfaces, with a half-life cf approximately 3.6-3.7 hours.

Poast degrades in loamy sand soil under aerobic, sterile/aerobic and anaerobic conditions. Microbial activity is primarily responsible for its disappearance. Half-life in loamy sand was determined to b 4-5 days and in loam about 11 days.

Laboratory soil leaching data shows that aged Poast residues could leach in soils. This is supported by the low soil adsorption coefficient (K = 0.3039 and 0.740 for soil with 0.69% and 2.44% organic matter, respectively). However, in a field leaching/dissipation study, Poast did not leach beyond the first 4 inches of soil and did not persist.

103.2 Water
(Excerpted from Bascietto's review of 10-28-83, #10

Poast is fairly stable to hydrolysis with a half-life of about 40 days at pH 7 and 25°C. The major hydrolysis metabolite is M2S, an oxazole derivative.

Photolytic half-lifes of Poast were about 23 and 38 minutes under anaerobic and aerobic aqueous solutions. M2S is the major hydrolysis product.

103.3 Plant
(excerpted from Bascietto's review of 10-28-83, #10)

Poast does not accumulate in rotational crop tissues. Measured residues were all below 0.066 ppm.

103.4 Animal
(Excerpted from Bascietto's review of 10-28-83, #10)

Fish accumulation data for bluegill and channel catfish indicates they will not accumulate residues of Bentazon when exposed to Bentazon residues in water, maximum concentration for bluegill whole fish was about 7X the water concentration at day 14. After 14 days depuration, over 90% of the maximum accumulated residues were eliminated. Accumulation levels in catfish are not expected to exceed 1X.

103.5 Estimated Environmental Concentration
(Excerpted from Bascietto's review of 10-28-83, #10)

Terrestrial

	PPM	
	at 0.2 lb/A	at 0.5 lb/A
short rangegrass	48	120
long grass	22	55
leaves and leafy crops	25	63
forage/small insects	11.5	29
legumes/large insects	2.4	6.0
fruit	1.4	3.5

Aquatic

A direct application of the maximum rate (0.5 lb ai/A) to a 6'-acre body of water could be expected to result in immediate residues no greater than 367 ppb, or about 90X below the no effect level for the most sensitive aquatic indicator organism (Daphnia magna) tested.

103 Uses and Special Concerns

The corn cluster biological opinion of March 18, 1983 indicates that Solano grass in California is the only endangered plant which may be affected by herbicides.